DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER BUREAU
SUPPLYING WATER TO THE PUBLIC

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(By authority conferred on the department of environmental quality by section 5 of 1976 PA 399, MCL 325.1005, and Executive Reorganization Order 1996-1, MCL 330.3101)

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of the Michigan Administrative Code are amended as follows:

PART 7. SURVEILLANCE, INSPECTION AND MONITORING

R 325.10702 Evaluation of adequacy and condition of public water ~~systems~~ **supplies**; sanitary surveys

Rule 702. (1) Under section 3 of the act, the department shall make sanitary surveys, on-site inspections, surveillance observations, or special purpose investigations for the purpose of evaluating the adequacy and condition of public water ~~systems~~ **supplies** at a frequency which may be determined by the department.

(2) Community and noncommunity water ~~systems~~ **supplies** which do not collect 5 or more routine samples per month under R 325.10705(2) and R 325.10706(2) shall undergo ~~an initial sanitary survey by June 29, 1994, for community water systems and by June 29, 1999, for noncommunity water systems. These systems shall undergo another~~ **a** sanitary survey every 5 years, except noncommunity water ~~systems~~ **supplies** that use only disinfected groundwater not under the direct influence of surface water meeting state drinking water standards shall undergo ~~subsequent~~ **a** sanitary survey~~s~~ at least once every 10 years after the initial sanitary survey. Based on the results of each sanitary survey, the department shall determine whether the existing monitoring frequency is adequate and what additional measures, if any, the supplier shall take to improve drinking water quality. **Sanitary surveys conducted under subrule (4) below may be used to meet the sanitary survey requirements of this subrule.**

(3) Subpart H systems shall undergo sanitary surveys at least once every 3 years for community water ~~systems~~ **supplies** and at least once every 5 years for noncommunity water ~~systems~~ **supplies**. Community water ~~systems~~ **supplies** that have undergone sanitary surveys after December 1995 and have demonstrated outstanding performance may reduce the frequency of sanitary surveys to at least once every 5 years.

(4) **This subrule is applicable to public water supplies that are subject to the groundwater supply provisions of R 325.10612.**

(a) Community water supplies shall undergo a sanitary survey no less frequently than every 3 years, except as provided in subdivision (b) of this subrule. Noncommunity water supplies shall undergo a sanitary survey no less frequently than every 5 years. Each community water supply shall undergo the initial sanitary survey by December 31, 2012, unless the supply meets the requirements of subdivision (b) of this subrule. Each community water supply that meets the requirements of subdivision (b) of this subrule and each noncommunity water supply shall undergo an initial sanitary survey by December 31, 2014.

(b) The department may reduce the frequency of sanitary surveys to once every 5 years for community water supplies if the supply meets both of the following criteria:

(i) The supply provides at least 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log inactivation and removal) before or at the first customer for all its groundwater sources.

(ii) The supply has an outstanding performance record.

R 325.10707a Invalidation of total coliform samples.

Rule 707a. (1) A total coliform sample result may be invalidated by the department in ~~any~~ **1 or more** of the following instances:

(a) A laboratory determines that analytical results are invalid due to any of the following situations:

(i) In the absence of gas, any turbid culture in the mtf or p-a techniques.

(ii) Confluent growth.

(iii) Any sample that is inoculated 30 hours or more after it was collected.

(iv) Improper sample analysis caused a total coliform positive result.

If a sample is invalidated under this subdivision, the water supply shall collect another sample from the same location as the original sample within 24 hours of being notified until a valid result is obtained. The department may waive the 24 hour time limit on a case by case basis.

(b) The department, on the basis of the results of repeat samples, determines that the total coliform positive sample~~ resulted from a domestic or other nondistribution system plumbing problem~~ **result, which is from a sample tap that is approved in the sample siting plan, is isolated to that specific sample location**. An invalidation under this subrule may occur **only** if the repeat samples from the same sampling location are total coliform positive and all other repeat samples are total coliform negative.

(c) Substantial evidence suggests that a total coliform positive result is due to ~~a circumstance or condition that~~ **use of an unapproved sample location or documented gross deviation from accepted sample collection procedures that clearly could be expected to contaminate the sample itself and the result** does not reflect water quality in the distribution system. The ~~supplier of water~~ **water supply** shall still collect all required repeat samples **from approved sites on the sample siting plan**.

(2) The decision to invalidate a total coliform positive sample shall be in writing and available to EPA and the public.

(3) A total coliform positive sample shall not be invalidated solely because all repeat samples are total coliform negative.

~~(4) If a sample is invalidated pursuant to the provisions of subrule (1) of this rule, a supplier of water shall collect another sample from the same location as the original sample within 24 hours of being notified until a valid result is obtained. The department may waive the 24 hour time limit on a case by case basis.~~

R 325.10708 Collection of additional samples.

Rule 708. If a sample which is needed to meet monitoring requirements is invalidated ~~pursuant to the provisions of~~ **under** R 325.10707a, and the ~~supplier of water~~ **public water supply** does not learn of the invalidation until the following monitoring period, or if the department collects a sample for the purpose of enforcement when a ~~supplier of water~~ **public water supply** is delinquent in meeting a monitoring requirement, ~~any samples collected pursuant to the provisions of R 325.10707a(4)~~ **then the valid sample collected** may be used ~~in determining~~ **to determine** compliance with ~~the provisions of~~ R 325.10705 and R 325.10706. However, a single sample shall not be attributed to more than 1 monitoring period.

R 325.10710a Monitoring requirements for lead and copper in tap water.

Rule 710a. (1) Sample site location provisions for lead and copper monitoring in tap water **of community and nontransient noncommunity water supplies** are as follows:

(a) By the applicable date for the commencement of monitoring under subrule (4)(a) of this rule, each ~~supplier~~ **water supply** shall complete a materials evaluation of its distribution system to identify a pool of targeted sampling sites that is in compliance with the

requirements of this rule and that is large enough to ensure that the ~~supplier~~ **water supply** can collect the number of lead and copper tap samples required under subrule (3) of this rule. All sites from which first draw samples are collected shall be selected from the pool of targeted sampling sites. Sampling sites may include faucets that have point of use or point of entry treatment devices designed to remove inorganic contaminants only if the devices have been approved by the department for the purpose of optimizing corrosion control.

(b) A ~~supplier~~ **water supply** shall use the information on lead, copper, and galvanized steel that it is required to collect under 40 C.F.R. §141.42(d), December 5, 1994, (Special Monitoring for Corrosivity Characteristics) when conducting a materials evaluation. When an evaluation of the information collected under 40 C.F.R. §141.42(d), is insufficient to locate the requisite number of lead and copper sampling sites that are in compliance with the targeting criteria in this subrule, the ~~supplier~~ **water supply** shall review the sources of information listed in paragraphs (i) to (iii) of this subdivision to identify a sufficient number of sampling sites. The provisions of 40 C.F.R. §141.42(d), December 5, 1994, are adopted by reference. The adopted material is available from the Superintendent of Documents at the address in R 325.10116(b) for a cost of $47.00 at the time of adoption of these rules. The adopted material is available for inspection, or copies are available at no cost from the offices of the department at the address in R 325.10116(a). In addition, the ~~supplier~~ **supply** shall collect all of the following information, where possible, in the course of its normal operations, for example, checking service line materials when reading water meters or performing maintenance activities:

(i) All plumbing codes, permits, and records in the files of the building department or departments that indicate the plumbing materials installed within publicly and privately owned structures connected to the distribution system.

(ii) All inspections and records of the distribution system that indicate the material composition of the service connections connecting a structure to the distribution system.

(iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, that indicates locations which may be particularly susceptible to high lead or copper concentrations.

(c) The sampling sites selected for a community water ~~system's~~ **supply's** sampling pool (tier 1 sampling sites) shall consist of single family structures to which either or both of the following provisions apply:

(i) The structures contain copper pipes soldered with lead and installed after 1982 or that contain lead pipes.

(ii) The structures are served by a lead service line. When multiple family residences comprise not less than 20% of the structures served by a ~~system, the supplier~~ **water supply, the supply** may include these types of structures in its sampling pool.

(d) ~~For a~~ **A** community water ~~system~~ **supply** that has insufficient tier 1 sampling sites~~, the sampling pool shall be completed~~ **shall complete its sampling pool** with tier 2 sampling sites, that consist of buildings, including multiple family residences to which either or both of the following provisions apply:

(i) The structures contain copper pipes soldered with lead and installed after 1982 or that contain lead pipes.

(ii) The structures are served by a lead service line.

(e) ~~For a~~ **A** community water ~~system~~ **supply** that has insufficient tier 1 and tier 2 sampling sites~~, the sampling pool shall be completed~~ **shall complete its sampling pool** with tier 3 sampling sites, that consist of single family structures containing copper pipes soldered with lead and installed before 1983. ~~The supplier of a~~ **A** community water ~~system~~ **supply** with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For purposes of this subrule, a

representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the system.

(f) The sampling sites selected for a nontransient, noncommunity water ~~system~~ **supply** (tier 1 sampling sites) shall consist of buildings to which either or both of the following provisions apply:

(i) The structures contain copper pipes soldered with lead and installed after 1982 or that contain lead pipes.

(ii) The structures are served by a lead service line.

(g) ~~The supplier of a~~ **A** nontransient, noncommunity water ~~system~~ **supply** that has insufficient tier 1 sites shall complete its sampling pool with sampling sites containing copper pipes soldered with lead and installed before 1983. If additional sites are needed to complete the sampling pool, the ~~supplier of a~~ nontransient noncommunity water ~~system~~ **supply** shall use representative sites throughout the distribution system. For purposes of this subrule, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the system.

(h) ~~If a~~ **A water supply whose** distribution system contains lead service lines~~, the supplier~~ shall draw 50% of the samples ~~collected~~ **it collect** during each monitoring period from sites that contain lead pipes or copper pipes with lead solder and 50% of the samples from sites served by a lead service line. A ~~supplier~~ **water supply** that cannot identify a sufficient number of sampling sites that are served by a lead service line shall collect first draw tap samples from all of the sites identified as being served by lead service lines and shall complete its sampling pool in compliance with subdivisions (c) to (g) of this subrule.

(2) Sample collection methods provisions for lead and copper monitoring in tap water are as follows:

(a) All tap samples for lead and copper collected in compliance with this subrule, with the exception of lead service line samples collected under R 325.10604f(5)(c), and samples collected under subdivision (e) of this subrule, shall be first draw samples.

(b) Each first draw tap sample for lead and copper shall be 1 liter in volume and have stood motionless in the plumbing system of each sampling site for not less than 6 hours. First draw samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap. First draw samples from a nonresidential building shall be 1 liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. Non first draw samples collected instead of first draw samples ~~pursuant to~~ **under** subdivision (e) of this subrule shall be 1 liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First draw samples may be collected by the ~~supplier or the supplier~~ **supply or the supply** may allow residents to collect first draw samples after instructing the residents about the sampling procedures specified in this subdivision. To avoid problems of residents handling nitric acid, acidification of first draw samples may be done up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample shall stand in the original container for the time specified in the approved epa method before the sample can be analyzed. If a ~~supplier~~ **supply** allows residents to perform sampling, the ~~supplier~~ **supply** shall not challenge the accuracy of the sampling results based on alleged errors in sample collection.

(c) Each service line sample shall be 1 liter in volume and have stood motionless in the lead service line for not less than 6 hours. Lead service line samples shall be collected in 1 of the following 3 ways:

(i) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line.

(ii) Tapping directly into the lead service line.

(iii) If the sampling site is a building constructed as a single family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

(d) A ~~supplier~~ **water supply** shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the ~~supplier~~ **water supply** cannot gain entry to a sampling site to collect a follow up tap sample, the ~~supplier~~ **supply** may collect the follow up tap sample from another sampling site in its sampling pool.

(e) ~~The supplier of a~~ **A** nontransient noncommunity water ~~system~~ **supply**, or a community water ~~system~~ **supply** that meets the criteria of ~~R 325.10410(8)(a) and (b)~~ **R 325.10410(3)(g)**, that does not have enough taps that can supply first draw samples, as defined in R 325.10105~~(d)~~, may apply to the department, in writing, to substitute non first draw samples. The ~~supplier~~ **supply** shall collect as many first draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The department has the discretion to waive the requirement for prior department approval of non first draw sample sites selected by the ~~supplier~~ **supply**, either through department regulation or written notification to the ~~supplier~~ **supply**.

(3) ~~Suppliers~~ **Water supplies** shall collect at least 1 sample during each monitoring period specified in subrule (4) of this rule from the number of sites listed in the standard monitoring column under this subrule. A ~~supplier~~ **supply** that conducts reduced monitoring under subrule (4)(d) of this rule shall collect at least 1 sample from the number of sites specified in the reduced monitoring column under this subrule during each monitoring period specified in subrule (4)(d) of this rule. The reduced monitoring sites shall be representative of the sites required for standard monitoring. **A public water supply that has fewer than 5 drinking water taps, that can be used for human consumption meeting the sample site criteria of subrule (1) of this rule to reach the required number of sample sites listed in this subrule, shall collect at least 1 sample from each tap and then shall collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively the department may allow these public water supplies to collect a number of samples less than the number of sites specified in this rule, provided that 100 percent of all taps that can be used for human consumption are sampled. The department shall approve this reduction of the minimum number of samples in writing based on a request from the supply or onsite verification by the department.** The department may specify sampling locations when a ~~system~~ **water supply** is conducting reduced monitoring.

~~System~~ **Supply** Size (Number of People Served)	Number of Sites (Standard Monitoring)	Number of Sites (Reduced Monitoring)
More than 100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
Fewer than 101	5	5

(4) Provisions for the timing of monitoring for lead and copper in tap water are as follows:

(a) The first 6 month monitoring period for small, medium size, and large water ~~systems~~ **supplies** shall begin on the following dates:

~~System~~ **Supply** Size	First 6 Month
(Number of People Served)	Monitoring Period Begins On
More than 50,000	January 1, 1992
3,301 to 50,000	July 1, 1992
Fewer than 3,301	July 1, 1993

All large water ~~systems~~ **supplies** shall be monitored during 2 consecutive 6 month periods. All small and medium size water ~~systems~~ **supplies** shall be monitored during each 6 month monitoring period until either of the following occurs:

(i) The ~~system~~ **supply** exceeds the lead or copper action level and ~~the supplier~~ is therefore required to implement the corrosion control treatment under R 325.10604f(2), in which case the ~~supplier~~ **supply** shall continue monitoring under subdivision (b) of this subrule.

(ii) The ~~system~~ **supply** is in compliance with the lead and copper action levels during 2 consecutive 6-month monitoring periods, in which case the ~~supplier~~ **supply** may reduce monitoring under subdivision (d) of this subrule.

(b) Monitoring provisions after the installation of corrosion control and source water treatment are as follows:

(i) ~~The supplier of a~~ **A** large water ~~system~~ **supply** that installs optimal corrosion control treatment under R 325.10604f(2)(d)(iii) shall monitor during 2 consecutive 6 month monitoring periods by the date specified in R 325.10604f(2)(d)(iv).

(ii) ~~The supplier of a~~ **A** small or medium size water ~~system~~ **supply** that installs optimal corrosion control treatment under R 325.10604f(2)(e)~~(v)~~**(iv)** shall monitor during 2 consecutive 6 month monitoring periods by the date specified in R 325.10604f(2)(e)~~(vi)~~**(v)**.

(iii) A ~~supplier~~ **supply** that installs source water treatment under R 325.10604f(4)(a)(ii) shall monitor during 2 consecutive 6 month monitoring periods by the date specified in R 325.10604f(4)(a)(iii).

(c) After the department specifies the values for water quality control parameters, the ~~supplier~~ **supply** shall monitor during each subsequent 6 month monitoring period, with the first monitoring period to begin on the date the department specifies the optimal values.

(d) Reduced monitoring provisions are as follows:

(i) ~~The supplier of a~~ **A** small or medium size water ~~system~~ **supply** that is in compliance with the lead and copper action levels during each of 2 consecutive 6 month monitoring periods may reduce the number of samples under subrule (3) of this rule and may reduce the frequency of sampling to once each year. **A small or medium size water supply collecting fewer than 5 samples as specified in subrule (3) of this rule, that meets the lead and copper action levels during each of 2 consecutive 6-month monitoring periods may reduce the frequency of sampling to once per year. In no case can the supply reduce the number of samples required below the minimum of 1 sample per available tap. This sampling shall begin during the calendar year immediately following the end of the second consecutive 6-month monitoring period.**

(ii) ~~A supplier of a small, medium size, or large water system that~~ **A water supply that meets the lead action level and** maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the department **under R 325.10604f(3)(f)** during each of 2 consecutive 6 month monitoring periods may reduce the frequency of monitoring ~~for lead and copper at the tap~~ to once each year and reduce the number of lead and copper samples under subrule (3) of this rule if it receives written approval from the department. **This sampling shall begin during the calendar year**

immediately following the end of the second consecutive 6-month monitoring period. The department shall review monitoring, treatment, and other relevant information submitted by the water supply under R 325.10710d, and shall notify the supply in writing when it determines the supply is eligible to commence reduced monitoring under this subrule. The department shall review, and where appropriate, revise its determination when the supply submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iii) ~~The supplier of a~~ **A** small or medium size water ~~system~~ **supply** that is in compliance with the lead and copper action levels during 3 consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every 3 years. **A small or medium size water supply collecting fewer than 5 samples as specified in subrule (3) of this rule, that meets the lead and copper action levels during 3 consecutive years of monitoring may reduce the frequency of sampling to once every 3 years.** ~~A supplier of a small, medium size, or large water system that~~ **A water supply that meets the lead action level and** maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the department **under R 325.10604f(3)(f)** during 3 consecutive years of monitoring may reduce the frequency of monitoring for lead and copper at the tap from annually to once every 3 years if it receives written approval from the department. **Samples collected once every 3 years shall be collected not later than every third calendar year. The department shall review monitoring, treatment, and other relevant information submitted by the supply under R 325.10710d, and shall notify the supply in writing when it determines the supply is eligible to reduce the frequency of monitoring to once every 3 years. The department shall review, and where appropriate, revise its determination when the supply submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.**

(iv) A ~~supplier who~~ **water supply that** reduces the number and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in subrule (1) of this rule. A ~~supplier who~~ **water supply that** samples annually or less frequently shall conduct the lead and copper tap sampling during the month of June, July, August, or September unless the department has approved a different sampling period under subparagraph (A) of this paragraph, as follows:

(A) The department, at its discretion, may approve a different period for conducting the lead and copper tap sampling for ~~suppliers~~ **supplies** collecting a reduced number of samples. The period shall be no longer than 4 consecutive months and shall represent a time of normal operation where the highest levels of lead are most likely to occur. For a nontransient noncommunity water ~~system~~ **supply** that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the department shall designate a period that represents a time of normal operation for the ~~system~~ **water supply**. **This sampling shall begin during the period approved or designated by the department in the calendar year immediately following the end of the second consecutive 6-month monitoring period for supplies initiating annual monitoring and during the 3-year period following the end of the third consecutive calendar year of annual monitoring for supplies initiating triennial monitoring.**

(B) Supplier~~s~~ monitoring annually that have been collecting samples during the months of June through September and that received department approval to alter their sample collection period under subparagraph (A) of this paragraph, shall collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. Supplier~~s~~ monitoring triennially that have been collecting samples during the months of June through September, and receive department approval to alter the sampling

collection period under subparagraph (A) of this paragraph, shall collect their next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling shall be collected annually or triennially, as required by this subrule. S~~uppliers of s~~mall water ~~systems~~ **supplies** with waivers, granted under subrule (7) of this rule, that have been collecting samples during the months of June through September and that received department approval to alter their sample collection period under subparagraph (A) of this paragraph shall collect their next round of samples before the end of the 9 year cycle.

(v) A ~~supplier~~ **water supply** that demonstrates for 2 consecutive 6 month monitoring periods that the tap water lead level computed under R 325.10604f(1)(c) is less than or equal to 0.005 mg/l and the tap water copper level computed under R 325.10604f(1)(c) is less than or equal to 0.65 mg/l may reduce the number of samples under subrule (3) of this rule and reduce the frequency of sampling to once every 3 calendar years.

(vi) The following provisions apply to supplies subject to reduced monitoring:

(A) ~~The supplier of a~~ **A** small or medium size water ~~system~~ **supply** subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling under subdivision (c) of this subrule and shall collect the number of samples specified for the standard monitoring under subrule (3) of this rule. The ~~supplier~~ **supply** shall also conduct water quality parameter monitoring under R 325.10710b(4), (5), or (6), as appropriate, during the monitoring period in which ~~the system~~ **it** exceeded the action level. The ~~supplier~~ **supply** may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subrule (3) of this rule after it has completed 2 subsequent consecutive 6 month rounds of monitoring that meet the criteria of paragraph (i) of this subdivision or may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (iii) or (v) of this subdivision.

(B) ~~If a system~~ **A water supply** subject to the reduced monitoring frequency **that** fails to **meet the lead action level during a 4-month monitoring period or that fails to** operate at or above the minimum value or within the range of values for the water quality parameters specified by the department **under R 325.10604f(3)(f)** for more than 9 days in a 6 month period specified in R 325.10710b(6~~), the supplier~~ shall conduct tap water sampling for lead and copper at the frequency specified in subdivision (c) of this subrule, collect the number of samples specified for standard monitoring under subrule (3) of this rule, and shall resume monitoring for water quality parameters within the distribution system under R 325.10710b(6). **This standard tap water sampling shall begin not later than the 6-month period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion.** The ~~supplier~~ **supply** may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

(1) The ~~supplier~~ **supply** may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subrule (3) of this rule after it has completed 2 subsequent 6 month rounds of monitoring that meet the criteria of paragraph (ii) of this subdivison and the ~~supplier~~ **supply** has received written approval from the department to resume reduced monitoring on an annual frequency. **This sampling shall begin during the calendar year immediately following the end of the second consecutive 6-month monitoring period.**

(2) The ~~supplier~~ **supply** may resume triennial monitoring for lead and copper at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (iii) or (v) of this subdivision and the ~~supplier~~ **supply** has received written approval from the department to resume triennial monitoring.

(3) The ~~supplier~~ **supply** may reduce the number of water quality parameter tap water samples required under R 325.10710b(7)(a) and the frequency with which it collects the samples under R 325.10710b(7)(b). The ~~supplier~~ **supply** may not resume triennial monitoring for water quality parameters at the tap until it demonstrates, under the requirements of R 325.10710b(7)(b), that it has requalified for triennial monitoring.

(vii) ~~For a system~~ **A water supply** subject to a reduced monitoring frequency under subdivision (d) of this subrule~~, if the supplier either adds a new source of water or changes the water treatment, it~~ shall ~~inform~~ **notify** the department in writing under R 325.10710d~~(1)~~(a)(iii) **of any upcoming long-term change in treatment or addition of a new source as described in that rule. The department shall review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water supply.**. The department may require the ~~supplier~~ **supply** to resume sampling under subdivision (c) of this subrule and collect the number of samples specified for standard monitoring under subrule (3) of this rule or take other appropriate steps such as increased water quality parameter monitoring or reevaluation of its corrosion control treatment given the potentially different water quality considerations.

(5) The results of monitoring conducted in addition to the minimum requirements of this rule shall be considered in calculating the ninetieth percentile lead or copper level.

(6) A sample invalidated under this subrule does not count toward determining lead or copper ninetieth percentile levels under R 325.**10**604f(1)(c) or toward meeting the minimum monitoring requirements of subrule (3) of this rule. All of the following provisions apply to invalidating samples:

(a) The department may invalidate a lead or copper tap water sample if at least 1 of the following conditions is met:

(i) The laboratory establishes that improper sample analysis caused erroneous results.

(ii) The department determines that the sample was taken from a site that did not meet the site selection criteria of this rule.

(iii) The sample container was damaged in transit.

(iv) There is substantial reason to believe that the sample was subject to tampering.

(b) The ~~supplier~~ **supply** shall report the results of all samples to the department and all supporting documentation for samples the ~~supplier~~ **supply** believes should be invalidated.

(c) To invalidate a sample under subdivision (a) of this subrule, the decision and the rationale for the decision shall be documented in writing. The department may not invalidate a sample solely on the grounds that a follow up sample result is higher or lower than that of the original sample.

(d) The ~~supplier~~ **water supply** shall collect replacement samples for the samples invalidated under this rule if, after the invalidation of 1 or more samples, the ~~supplier~~ **supply** has too few samples to meet the minimum requirements of subrule (3) of this rule. The replacement samples shall be taken as soon as possible, but not later than 20 days after the date the department invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(7) ~~The supplier of a~~ **A** small water ~~system~~ **supply** that meets the criteria of this subrule may apply to the department to reduce the frequency of monitoring for lead and copper under this rule to once every 9 years, that is, a "full waiver", if it meets all of the materials criteria specified in subdivision (a) of this subrule and all of the monitoring criteria specified in subdivision (b) of this subrule. If a small water ~~system~~ **supply** meets the criteria in subdivisions (a) and (b) of this subrule only for lead, or only for copper, the ~~supplier~~ **supply**

may apply to the department for a waiver to reduce the frequency of tap water monitoring to once every 9 years for that contaminant only, that is, a "partial waiver".

(a) The ~~supplier~~ **supply** shall demonstrate that its distribution system and service lines and all drinking water system plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead containing materials or copper containing materials, or both, as those terms are defined in this subdivision, as follows:

(i) To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead, that is, a "lead waiver", the ~~supplier~~ **water supply** shall provide certification and supporting documentation to the department that the ~~system~~ **supply** is free of all lead containing materials and that the ~~system~~ **supply** complies with both of the provisions in this paragraph. Lead free is defined in the international plumbing code, ~~2000~~ **2003** edition, which is adopted by reference in ~~R 407.30701~~ **R 408.30701**.

(A) ~~The system~~ **It** does not contain plastic pipes that contain lead plasticizers or plastic service lines that contain lead plasticizers.

(B) ~~The system~~ **It** is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless the fittings and fixtures meet the specifications of standards established ~~pursuant to~~ **under** "Prohibition on Use of Lead Pipes, Solder, and Flux: Plumbing Fittings and Fixtures" 42 U.S.C. 300G 6(e), which are adopted by reference. The adopted material is available from the Superintendent of Documents at the address in R 325.10116(b) for a cost of $56.00 at the time of adoption of these rules. The adopted material is available for inspection, or copies are available at no cost from the offices of the department at the address in R 325.10116(a).

(ii) To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper, that is, a "copper waiver", the ~~supplier~~ **water supply** shall provide certification and supporting documentation to the department that the ~~system~~ **supply** does not contain copper pipes or copper service lines.

(b) The ~~supplier~~ **supply** shall have completed at least ~~1 6~~ **one 6** month round of standard tap water monitoring for lead and copper at sites approved by the department and from the number of sites required by subrule (3) of this rule and demonstrate that the ninetieth percentile levels for all rounds of monitoring conducted since the ~~system~~ **supply** became free of all lead containing or copper containing materials, or both, as appropriate, meet the following criteria:

(i) To qualify for a full waiver or a lead waiver, the ~~supplier~~ **supply** shall demonstrate that the ninetieth percentile lead level does not exceed 0.005 mg/l.

(ii) To qualify for a full waiver or a copper waiver, the ~~supplier~~ **supply** shall demonstrate that the ninetieth percentile copper level does not exceed 0.65 mg/l.

(c) The department shall notify the ~~system~~ **supply** of its waiver determination, in writing setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the department may require the ~~supplier~~ **supply** to perform specific activities, for example, limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver, to avoid the risk of lead or copper concentration of concern in tap water. The ~~supplier~~ **small supply** shall continue monitoring for lead and copper at the tap as required by subdivisions (a) through (d) of this subrule, as appropriate, until it receives written notification from the department that the waiver has been approved.

(d) Monitoring frequencies for supplies with waivers are as follows:

(i) ~~For a system~~ **A supply** with a full waiver~~, the supplier~~ shall conduct tap water monitoring for lead and copper under subrule (4)(d)(iv) of this rule at the reduced number of sampling sites identified in subrule (3) of this rule at least once every 9 years and provide the materials certification specified in subdivision (a) of this subrule for both lead and copper

to the department along with the monitoring results. **Samples collected every 9 years shall be collected not later than every ninth calendar year.**

(ii) ~~For a system~~ **A supply** with a partial waiver~~, the supplier~~ shall conduct tap water monitoring for the waived contaminant under subrule (4)(d)(iv) of this rule at the reduced number of sampling sites specified in subrule (3) of this rule at least once every 9 years and provide the materials certification specified in subdivision (a) of this subrule pertaining to the waived contaminant along with the monitoring results. **Samples collected every 9 years for the waived contaminant shall be collected not later than every ninth calendar year.** The ~~supplier~~ **supply** also shall continue to monitor for the non waived contaminant under requirements of subrule (4)(a) through (d) of this rule, as appropriate.

(iii) ~~For a system~~ **A water supply** with a full or partial waiver~~, if the supplier adds a new source of water or changes the water treatment, it~~ shall notify the department, in writing, under R 325.10710d(a)(iii) **of an upcoming long-term change in treatment or addition of a new source, as described in that rule. The department shall review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water supply**. The department has the authority to require the ~~supplier~~ **water supply** to add or modify waiver conditions, for example, require recertification that the system is free of lead containing or copper containing materials, or both, require additional round or rounds of monitoring, if it considers the modifications are necessary to address treatment or source water changes at the~~ system~~ **water supply**.

(iv) ~~For a system~~ **If a water supply** with a full or partial waiver~~, if the supplier~~ becomes aware that ~~the system~~ **it** is no longer free of lead containing or copper containing materials, as appropriate, for example, as a result of new construction or repairs, the ~~supplier~~ **supply** shall notify the department, in writing, not later than 60 days after becoming aware of the change.

(e) If the ~~supplier~~ **supply** continues to satisfy the requirements of subdivision (d) of this subrule, the waiver will be renewed automatically, unless a condition listed in paragraphs (i) through (iii) of this subdivision occurs. ~~For a system~~ **A supply** whose waiver has been revoked~~, the supplier~~ may reapply for a waiver if it again meets the appropriate materials and monitoring criteria of subdivisions (a) and (b) of this subrule. The waiver is revoked if any of the following conditions exist:

(i) A ~~system~~ **supply** with a full waiver or a lead waiver no longer satisfies the materials criteria of subdivision (a)(i) of this subrule or has a ninetieth percentile lead level of more than 0.005 mg/l.

(ii) A ~~system~~ **supply** with a full waiver or a copper waiver no longer satisfies the materials criteria of subdivision (a)(ii) of this subrule or has a ninetieth percentile copper level of more than 0.65 mg/l.

(iii) The department notifies the~~ supplier~~ **supply**, in writing setting forth the basis of its decision, that the waiver has been revoked.

(f) A ~~system~~ **supply** whose full or partial waiver has been revoked by the department is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

(i) If the ~~system~~ **supply** exceeds the lead or copper action level, or both, the ~~supplier~~ **supply** shall implement corrosion control treatment under the deadlines specified in R 325.10604f(2)(e) and other applicable requirements of this part.

(ii) If the ~~system~~ **supply** meets both the lead and the copper action level, the ~~supplier~~ **supply** shall monitor for lead and copper at the tap not less frequently than once every 3 years using the reduced number of sample sites specified in subrule (3) of this rule.

(g) Small water ~~system~~ **supply** waivers approved by the department, in writing, before April 11, 2000, shall remain in effect if the ~~supplier~~ **supply** has demonstrated that ~~the system~~ **it** is both free of lead containing and copper containing materials, as required by

subdivision (a) of this subrule, and that ~~the system's~~ **its** ninetieth percentile lead levels and ninetieth percentile copper levels meet the criteria of subdivision (b) of this subrule, and that the ~~supplier~~ **supply** continues to meet the waiver eligibility criteria of subdivision (e) of this subrule. The first round of tap water monitoring conducted ~~pursuant to~~ **under** subdivision (d) of this subrule shall be completed not later than 9 years after the last time the ~~supplier~~ **supply** has monitored for lead and copper at the tap.

R 325.10710b Monitoring requirements for supplies exceeding lead and copper action levels.

Rule 710b. (1) The requirements of this rule are summarized in table 1 of this rule. ~~Suppliers of the following systems~~ **The following community and nontransient noncommunity water supplies, which are considered "water supplies" or "supplies" in this rule,** shall monitor for water quality parameters in addition to lead and copper under this rule:

(a) Large water ~~systems~~ **supplies**.

(b) Small and medium size water ~~systems~~ **supplies** that exceed the lead or copper action level.

(2) Sample collection methods provisions are as follows:

(a) Tap samples shall be representative of water quality throughout the distribution system taking all of the following factors into account:

(i) The number of persons served.

(ii) The different sources of water.

(iii) The different treatment methods employed by the ~~supplier~~ **supply**.

(iv) Seasonal variability.

Tap sampling under this subdivision is not required to be conducted at taps targeted for lead and copper sampling under R 325.10710a(1).

(b) Samples collected at the entry point or points to the distribution system shall be from locations that are representative of each source after treatment. If a ~~system~~ **supply** draws water from more than 1 source and the sources are combined before distribution, the ~~supplier~~ **supply** shall sample at an entry point to the distribution system during periods of normal operating conditions, for example, when water is representative of all sources being used.

(3) The number of samples a ~~supplier~~ **supply** is required to collect are as follows:

(a) A ~~supplier~~ **supply** shall collect 2 tap samples for applicable water quality parameters during each monitoring period specified in subrules (4) to (7) of this rule from the following number of sites:

~~System~~ **Supply** Size (Number of People Served)	Number of Sites for Water Quality Parameters
More than 100,000	25
10,001 to 100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
Fewer than 101	1

(b) Except as provided in subrule (5)(c) of this rule, a ~~supplier~~ **water supply** shall collect 2 samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in subrule (4) of this rule. During each

monitoring period specified in subrules (5) to (7) of this rule, a ~~supplier~~ **supply** shall collect 1 sample for each applicable water quality parameter at each entry point to the distribution system.

(4) ~~The supplier of a~~ **A** large water ~~system~~ **supply** shall measure the applicable water quality parameters, at the locations specified in the following subdivisions at taps and at each entry point to the distribution system during each 6 month monitoring period specified in R 325.10710a(4)(a). ~~The supplier of a~~ **A** small or medium size water ~~system~~ **supply** shall measure the applicable water quality parameters at the locations specified in the following subdivisions during each 6 month monitoring period, as specified in R 325.10710a(4)(a), that the ~~system~~ **supply** exceeds the lead or copper action level:

(a) At taps, ~~a sample for~~ **a water supply shall measure** each of the following:

(i) pH.

(ii) Alkalinity.

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used.

(iv) Silica, when an inhibitor containing a silicate compound is used.

(v) Calcium.

(vi) Conductivity.

(vii) Water temperature.

(b) At each entry point to the distribution system, ~~a sample for~~ **a water supply shall measure** each of the applicable parameters that are listed in subdivision (a) of this subrule.

(5) ~~The supplier of a~~ **A** large water ~~system~~ **supply** that installs optimal corrosion control treatment under R 325.10604f(2)(d)(iii) shall measure the water quality parameters at the locations and frequencies specified in this subrule during each 6 month monitoring period specified in R 325.10710a(4)(b)(i). ~~The supplier of a~~ **A** small or medium size water ~~system who~~ **supply that** installs optimal corrosion control treatment shall measure the water quality parameters at the locations specified in the following subdivisions during each 6 month monitoring period, as specified in R 325.10710a(4)(b)(ii), that the ~~system~~ **supply** exceeds the lead or copper action level:

(a) At taps, 2 samples for each of the following:

(i) pH.

(ii) Alkalinity.

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used.

(iv) Silica, when an inhibitor containing a silicate compound is used.

(v) Calcium, when calcium carbonate stabilization is used as part of the corrosion control.

(b) Except as provided in subdivision (c) of this subrule, at each entry point to the distribution system, at least 1 sample no less frequently than every 2 weeks for each of the following:

(i) pH.

(ii) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity and a reading of the alkalinity concentration.

(iii) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used and a reading of the concentration of orthophosphate or silica, whichever is applicable.

(c) A ~~supplier of a~~ ground water ~~system~~ **supply** may limit entry point sampling described in subdivision (b) of this subrule to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated ground water sources mixes with water from treated ground water sources, the ~~supplier~~ **supply** shall monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Before the start of the monitoring under this subdivision, the ~~supplier~~ **supply** shall provide to the department written

information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(6) After the department specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment **under R 325.10604f(3)(f)**, ~~the supplier of a~~ large water ~~system~~ **supplies** shall measure the applicable water quality parameters under subrule (5) of this rule and determine compliance with the requirement of R 325.10604f(3)~~(f)~~**(g)** every 6 months with the first 6 month period to begin on ~~the date~~ **either January 1 or July 1, whichever comes first, after** the department specifies the optimal values **under R 325.10604f(3)(f)**. ~~The supplier of a~~ **A** small or medium size water ~~system~~ **supply** shall measure the applicable water quality parameters under subrule (5) of this rule during each 6 month period, as specified in this subrule that the ~~system~~ **supply** exceeds the lead or copper action level. For the small or medium size water ~~system~~ **supply** subject to a reduced monitoring frequency ~~pursuant to~~ **under** R 325.10710a(4)(d) when the action level is exceeded, the ~~end~~ **start** of the applicable 6 month period under this subrule shall coincide with the ~~end~~ **start** of the applicable monitoring period under R 325.10710a(4)(d). Compliance with department designated optimal water quality parameter values shall be determined as specified under R 325.10604f(3)~~(f)~~**(g)**.

(7) Reduced monitoring provisions are as follows:

(a) A ~~supplier~~ **supply** that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of 2 consecutive 6 month monitoring periods under subrule (6) of this rule shall continue monitoring applicable water quality parameters at the locations and frequencies specified in subrule (5) of this rule. The ~~supplier~~ **supply** may reduce the number of sites from which it monitors during each 6 month monitoring period to the following:

~~System~~ **Supply** Size	Reduced Number of Sites
(Number of People Served)	For Water Quality Parameters
More than 100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
Fewer than 101	1

(b) Reduced monitoring frequency provisions are as follows:

(i) A ~~supplier~~ **water supply** that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department **under R 325.10604f(3)(f)** during 3 consecutive years of monitoring specified in this subdivision may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subdivision (a) of this subrule from every 6 months to annually. **This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of 6-month monitoring occurs.** A ~~supplier~~ **water supply** that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department **under R 325.10604f(3)(f)** during 3 consecutive years of annual monitoring specified in this subdivision may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subdivision (a) of this subrule from annually to every 3 years. **This sampling begins not later than the third**

calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

(ii) A ~~supplier~~ **water supply** may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in subdivision (a) of this subrule to every 3 years if it demonstrates during 2 consecutive monitoring periods that its tap water lead level at the ninetieth percentile is less than or equal to the PQL for lead specified in 40 C.F.R §141.89(a)(1)(ii), as adopted by reference in R 325.10605, that its tap water copper level at the ninetieth percentile is less than or equal to 0.65 mg/l for copper in R 325.10604f~~(3)(f)~~**(1)(c)**, and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department **in R 325.10604f(3)(f)**. **Monitoring conducted every 3 years shall be done not later than every third calendar year.**

(c) A ~~supplier~~ **water supply** that conducts sampling annually shall collect the samples evenly throughout the year to reflect seasonal variability.

(d) ~~The supplier of a system~~ **A water supply** subject to the reduced monitoring frequency ~~who~~ **that** fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the department for more than 9 days in a 6 month period specified in R 325.10604f(3)~~(f)~~**(g)** shall resume distribution system tap water sampling under the number and frequency requirements specified in subrule (6) of this rule. The ~~supplier~~ **supply** may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in subdivision (a) of this subrule after it has completed 2 subsequent consecutive 6 month rounds of monitoring that meet the criteria of that subdivision or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subdivision (b)(i) or (ii) of this subrule.

(8) ~~Additional monitoring provisions are as follows:~~

~~(a)~~ The results of monitoring conducted in addition to the minimum requirements of this rule shall be considered in determining the concentrations of water quality parameters.

~~(b) A supplier that fails to meet the lead action level based on tap samples collected under R 325.10710a shall offer to arrange for sampling the tap water of a customer who requests sampling. The supplier is not required to pay for collecting or analyzing the sample and is not required to collect and analyze the sample.~~

(9) Table 1 of this rule reads as follows:

Table 1 Summary of Monitoring Requirements for Water Quality Parameters – Lead, Copper, Corrosion Control[1]

Monitoring Period	Parameters[2]	Location	Frequency
Initial monitoring	pH, alkalinity, orthophosphate or silica3, calcium, conductivity, temperature	Taps and at entry point or points to distribution system	6 months
After installation of corrosion control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months

	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point or points to distribution system6	No less frequently than every 2 weeks
After department specifies parameter values for optimal corrosion control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point or points to distribution system[6]	No less frequently than every 2 weeks
Reduced monitoring	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months annually[7] or every 3 years[8] at a reduced number of sites
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted control), inhibitor dosage rate and inhibitor residual[5]	Entry point or points to distribution system[6]	No less frequently than every 2 weeks

[1] Table is for illustrative purposes; consult the text of this part for precise regulatory requirements.

[2] S~~uppliers of s~~mall and medium size water ~~systems~~ **supplies** shall monitor for water quality parameters during monitoring periods in which the ~~system~~ **supply** exceeds the lead or copper action level.

[3] Orthophosphate shall be measured when an inhibitor containing a phosphate compound is used. Silica shall be measured when an inhibitor containing silicate compound is used.

[4] Calcium shall be measured when calcium carbonate stabilization is used as part of corrosion control.

[5] Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) shall be measured when an inhibitor is used.

[6] Ground water supplier~~s~~ may limit monitoring to representative locations throughout the system.

[7] ~~Suppliers~~ **Water supplies** may reduce frequency of monitoring for water quality parameters at the tap from every 6 months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of monitoring.

8 ~~Suppliers~~ **Water supplies** may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of annual monitoring. ~~Suppliers~~ **Water supplies** may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained ninetieth percentile lead levels less than or equal to 0.005 mg/l, ninetieth percentile copper levels less than or equal to 0.65 mg/l, and the range of water quality parameters designated by the department as representing optimal corrosion control during 2 consecutive 6 month monitoring periods.

R 325.10710c Monitoring requirements for lead and copper in source water.

Rule 710c. (1) Sample location, collection methods, and number of samples required for lead and copper monitoring in source water **of community and nontransient noncommunity water supplies** are as follows:

(a) ~~The supplier of a system~~ **A water supply** that fails to meet the lead or copper action level based on tap samples collected under R 325.10710a shall collect lead and copper source water samples under the following requirements regarding sample location, number of samples, and collection methods:

(i) ~~Suppliers of ground~~ **Ground**water ~~systems~~ **supplies** shall take a minimum of 1 sample at every entry point to the distribution system which is representative of each well after treatment, hereafter called a sampling point. The ~~supplier~~ **supply** shall take 1 sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) ~~Suppliers of s~~urface water ~~systems~~ **supplies** shall take a minimum of 1 sample at every entry point to the distribution system after the application of treatment or in the distribution system at a point which is representative of each source after treatment, hereafter called a sampling point. The ~~supplier~~ **supply** shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. For purposes of this paragraph, surface water ~~systems~~ **supplies** include ~~systems~~ **water supplies** with a combination of surface and ground sources.

(iii) If a ~~system~~ **supply** draws water from more than 1 source and the sources are combined before distribution, the ~~supplier~~ **supply** shall sample at an entry point to the distribution system during periods of normal operating conditions, that is, when water is representative of all sources being used.

(b) If the results of sampling, taken to determine compliance with R 325.106**0**4f(4)(b)(iv), indicate an exceedance of the maximum permissible source water levels established by the department, then the department may require that 1 additional sample be collected as soon as possible after the initial sample was taken, but not more than 2 weeks later, at the same sampling point. If a department required confirmation sample is taken for lead or copper, then the results of the initial and confirmation samples shall be averaged to determine compliance with the department specified maximum permissible levels. A sample value below the detection limit shall be considered to be zero. A value above the detection limit,

but below the PQL, shall either be considered as the measured value or be considered 1/2 of the PQL.

(2) ~~The supplier of a system~~ **A water supply** that exceeds the lead or copper action level at the tap shall collect 1 source water sample from each entry point to the distribution system ~~within~~ **no later than** 6 months after ~~the action level is exceeded~~ **the end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the department has established an alternate monitoring period, the last day of that period**.

(3) A ~~supplier~~ **supply** that installs source water treatment under R 325.10604f(4)(a)(ii) shall collect an additional source water sample from each entry point to the distribution system during 2 consecutive 6 month monitoring periods by the deadline specified in R 325.10604f(4)(a)(iii).

(4) The following provisions apply to the monitoring frequency after the department specifies maximum permissible source water levels or determines that source water treatment is not needed:

(a) A ~~supplier~~ **supply** shall monitor to determine compliance with R 325.10604f(4)(b)(iv) at the frequency specified in the following paragraphs where the department specifies maximum permissible source water levels or determines that the ~~supplier~~ **supply** is not required to install source water treatment:

(i) A ~~supplier of~~ **water supply using** only groundwater shall collect samples once during the 3 year compliance period, as defined in R 325.10103, that is in effect when the applicable department determination under this subdivision is made. The ~~supplier~~ **supply** shall collect samples once during each subsequent compliance period. **Triennial samples shall be collected every third calendar year.**

(ii) A ~~supplier of~~ **water supply using** surface water or a combination of surface water and groundwater shall collect samples once during each year. The first annual monitoring period shall begin ~~on the date on~~ **during the year in** which the applicable department determination is made under this subdivision.

(b) A ~~supplier~~ **supply** is not required to conduct source water sampling for lead or copper if the ~~system~~ **supply** is in compliance with the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the ~~system~~ **supply** under subdivision (a)(i) and (ii) of this subrule.

(5) Reduced monitoring frequency provisions are as follows:

(a) A ~~supplier of~~ **water supply using** only groundwater may reduce the monitoring frequency for lead and copper in source water to once during each 9 year compliance cycle, as defined in R 325.10103 **provided that the samples are collected not later than every ninth calendar year and** if the ~~system~~ **supply** meets 1 of the following criteria:

(i) The ~~supplier~~ **supply** demonstrates that finished drinking water entering the distribution system has been maintained below the department specified maximum permissible lead and copper concentrations as required in R 325.10604f(4)(b)(iv) during not less than 3 consecutive compliance periods under subrule (4)(a) of this rule.

(ii) The department has determined that source water treatment is not needed and the ~~supplier~~ **supply** demonstrates that, during not less than 3 consecutive compliance periods in which sampling was conducted under subrule (4)(a) of this rule, the concentration of lead in source water was less than or equal to 0.005 mg/l and the concentration of copper in source water was less than or equal to 0.65 mg/l.

(b) ~~The supplier of~~ **A water supply using** surface water or a combination of surface water and groundwater may reduce the monitoring frequency in subrule (4)(a) of this rule to once during each 9 year compliance cycle, as defined in R 325.10103 **provided that the**

samples are collected not later than every ninth calendar year and if the ~~system~~ **supply** meets either of the following criteria:

(i) The ~~supplier~~ **supply** demonstrates that finished drinking water entering the distribution system has been maintained below the department specified maximum permissible lead and copper concentrations as required in R 325.10604f(4)(b)(iv) for not less than 3 consecutive years.

(ii) The department has determined that source water treatment is not needed and the ~~supplier~~ **supply** demonstrates that, during not less than 3 consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/l and the concentration of copper in source water was less than or equal to 0.65 mg/l.

(c) A ~~system~~ **water supply** that uses a new source of water is not eligible for reduced monitoring for lead or copper until concentrations in samples collected from the new source during 3 consecutive monitoring periods are below the department specified maximum permissible lead and copper concentrations as required in R 325.10604f(4)(a)(iv).

R 325.10710d Reporting requirements for lead, copper, and corrosion control.

Rule 710d. ~~A supplier~~ **This rule applies to all community and nontransient noncommunity water supplies. These public water supplies are also considered "water supplies" or "supplies" in this rule. Supplies** shall report all of the following information to the department ~~under this rule~~:

(a) Reporting provisions for tap water monitoring for lead and copper and for water quality parameter monitoring are as follows:

(i) Except as provided in subparagraph (G) of this paragraph, a ~~supplier~~ **water supply** shall report the information specified in this paragraph for all tap water samples specified in R 325.10710a and for all water quality parameter samples specified in R 325.10710b within the first 10 days after the end of each applicable monitoring period specified in R 325.10710a and R 325.10710b, for example, every 6 months, annually, every 3 years, or every 9 years~~:~~**. For monitoring periods with a duration less than 6 months, the end of the monitoring period is the last date samples can be collected during that period as specified in R 325.10710a to R 325.10710b.**

(A) The results of all tap samples for lead and copper, including the location of each site and the criteria in R 325.10710a(1)(c), (d), (e), (f), or (g) used to select the site for the system's sampling pool.

(B) Documentation for each tap water lead or copper sample for which the ~~supplier~~ **water supply** requests invalidation ~~pursuant to~~ **under** R 325.10710a(6)(b).

(C)The ninetieth percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, calculated in compliance with the provisions of R 325.10604f(1)(c)(i), unless the department calculates the system's ninetieth percentile lead and copper levels under subdivision (h) of this subrule.

(D) With the exception of initial tap sampling conducted under R 325.10710a(4)(a), a ~~supplier~~ **water supply** shall designate sites not sampled during previous monitoring periods and include an explanation of why sampling sites have changed.

(E) The results of all tap samples for pH and, where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under R 325.10710b(b) to (e).

(F) The results of all samples collected at the entry point or points to the distribution system for applicable water quality parameters under R 325.10710b(b) to (e).

(G) A ~~supplier~~ **water supply** shall report the results of all water quality parameter samples collected under R 325.10710b(5) through (8) during each 6 month monitoring period specified in R 325.10710b(6) within the first 10 days following the end of the

monitoring period, unless the department has specified a more frequent reporting requirement.

(ii) For a nontransient noncommunity water system, or a community water system meeting the criteria of R 325.10410~~(8)(a) and (b)~~**(3)(g)**, that does not have enough taps that can provide first draw samples, the ~~supplier~~ **supply** shall do either of the following as appropriate:

(A) Provide written documentation to the department identifying standing times and locations for enough non first draw samples to make up its sampling pool under R 325.10710a(2)(e) by the start of the first applicable monitoring period under R 325.10710a(4) that commences after April 11, 2000, unless the department has waived prior department approval of non first draw sample sites selected by the ~~supplier pursuant to~~ **supply under** R 325.10710a(2)(e).

(B) If the department has waived prior approval of non first draw sample sites selected by the ~~supplier~~ **supply**, identify, in writing, each site that did not meet the 6 hour minimum standing time and the length of standing time for that particular substitute sample collected ~~pursuant to~~ **under** R 325.10710a(2)(e) and include this information with the lead and copper tap sample results submitted ~~pursuant to~~ **under** subdivision (a)(i) of this subrule.

(iii) ~~Not later than 60 days after the~~ **At a time specified by the department, or if no specific time is designated by the department, then as early as possible prior to the** addition of a new source or a **long-term** change in water treatment, ~~unless the department requires earlier notification, a supplier~~ **a water supply** considered to have optimized corrosion control under R 325.10604f(2)(b), a system subject to reduced monitoring ~~pursuant to~~ **under** R 325.10710a(4)(d), or a system subject to a monitoring waiver ~~pursuant to~~ **under** R 325.10710a(7) shall ~~send~~ **submit** written documentation to the department describing the change **or addition**. ~~If prior department approval of the treatment change or new source is not required, suppliers are encouraged to provide the notification to the department beforehand to minimize the risk the treatment change or new source will adversely affect optimal corrosion control.~~ **The department shall review and approve the addition of a new source or long-term change in treatment before it is implemented by the water supply. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (for example, alum to ferric chloride), and switching corrosion inhibitor products (for example, orthophosphate to blended phosphate). Long- term changes can include dose changes to existing chemicals if the supply is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.**

(iv) ~~The supplier of a~~ **A** small water ~~system~~ **supply** applying for a monitoring waiver under R 325.10710a(7), or subject to a waiver granted ~~pursuant to~~ **under** R 325.10710a(7)(c), shall provide all of the following information to the department, in writing, by the specified deadline:

(A) By the start of the first applicable monitoring period in R 325.10710a(4), ~~the supplier of~~ a small water ~~system~~ **supply** applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of R 325.10710a(7)(a) and (b).

(B) Not later than 9 years after the monitoring previously conducted ~~pursuant to~~ **under** R 325.10710a(7)(b) or R 325.10710a(7)(d)(i), ~~the supplier of~~ a small water ~~system~~ **supply** desiring to maintain its monitoring waiver shall provide the information required by R 325.10710a(7)(d)(i) and (ii).

(C) Not later than 60 days after ~~the supplier~~ **it** becomes aware that the system is no longer free of lead containing or copper containing material, or both, as appropriate, ~~the supplier of~~ a small water ~~system~~ **supply** with a monitoring waiver shall provide written notification to the department, setting forth the circumstances resulting in the lead containing or copper containing materials, or both, being introduced into the system and what corrective action, if any, the ~~supplier~~ **supply** plans to remove these materials.

(v) ~~For each~~ **Each** ground water ~~system~~ **supply** that limits water quality parameter monitoring to a subset of entry points under R 325.10710b(5)(c), the ~~supplier~~ **supply** shall provide, by the commencement of the monitoring, written correspondence to the department that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(b) Source water monitoring provisions are as follows:

(i) A ~~supplier~~ **water supply** shall report the sampling results for all source water samples collected under R 325.10710c within the first 10 days after the end of each source water monitoring period, for example, annually, per compliance period, or per compliance cycle, specified in R 325.10710c.

(ii) With the exception of the first round of source water sampling conducted under R 325.10710c(2), a ~~supplier~~ **supply** shall specify sites that were not sampled during previous monitoring periods and include an explanation of why the sampling points have changed.

(c) A ~~supplier~~ **supply** shall report the following corrosion control treatment information to the department by the applicable dates specified in R 325.10604f(2):

(i) For a ~~supplier~~ **supply** that has already optimized corrosion control, the information required in R 325.10604f(2)(b)(ii) or (iii).

(ii) For a ~~supplier~~ **supply** required to optimize corrosion control, the ~~supplier's~~ **supply's** recommendation regarding optimal corrosion control treatment under R 325.10604f(3)(a).

(iii) For a ~~supplier~~ **supply** that is required to evaluate the effectiveness of corrosion control treatments under R 325.10604f(3)(c), the information required by R 325.10604f(3)(c).

(iv) For a ~~supplier~~ **supply** required to install optimal corrosion control designated by the department under R 325.10604f(3)(d), documentation certifying that the ~~supplier~~ **supply** has completed installing the optimal corrosion control.

(d) A ~~supplier~~ **water supply** shall provide the following source water treatment information to the department by the applicable dates specified in R 325.10604f(4):

(i) If required under R 325.10604f(4)(b)(i), the ~~supplier's~~ **supply's** recommendation regarding source water treatment.

(ii) For a ~~supplier~~ **supply** required to install source water treatment under R 325.10604f(4)(b)(ii), documentation certifying that the ~~supplier~~ **supply** has completed installing the treatment designated by the department within 24 months after the department designated the treatment.

(e) A ~~supplier~~ **water supply** shall report all of the following lead service line replacement information to the department to demonstrate compliance with the requirements of R 325.10604f(5):

(i) ~~Within~~ **Not later than** 12 months after **the end of a monitoring period in which** ~~a system~~ **a supply** exceeds the lead action level in sampling referred to in R 325.10604f(5)(a), the ~~supplier shall submit a written report~~ **supply shall submit written documentation** to the department ~~that demonstrates the supplier has conducted a~~ **of the** materials evaluation~~, including the evaluation specified~~ **conducted as required** in R 325.10710a(1), ~~to~~ identify the initial number of lead service lines in its distribution system **at the time the supply exceeds the lead action level,** and ~~shall~~ provide the ~~department with~~

~~the supplier's~~ **supply's** schedule for **annually** replacing ~~annually~~ not less than 7% of the initial number of lead service lines in its distribution system.

(ii) ~~Within~~ **Not later than** 12 months after **the end of a monitoring period in which** a ~~system~~ **supply** exceeds the lead action level in sampling referred to in R 325.10604f(5)(a), and every 12 months thereafter, the ~~supplier~~ **supply** shall submit a written report to the department that demonstrates the ~~supplier~~ **supply** has complied with either of the following requirements:

(A) Replaced, in the previous 12 months, not less than 7% of the initial lead service lines, or a greater number of lines specified by the department under R 325.10604f (4), in its distribution system.

(B) Conducted sampling demonstrating that the lead concentration in all service line samples from an individual line or lines, taken under R 325.10710a(2)(c), is less than or equal to 0.015 mg/l. In those cases, the total number of lines that were replaced or that meet the criteria specified in R 325.10604f(5)(c), or both, shall equal not less than 7% of the initial number of lead lines identified under subdivision ~~(a) of this rule~~ **(i) of this subrule** or the percentage specified by the department under R 325.10604f~~(4)~~**(5)(e)**.

(iii) The annual documentation submitted to the department under paragraph (ii) of this subdivision, which shall contain all of the following information:

(A) The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule.

(B) The number and location of each lead service line replaced during the previous year of the system's replacement schedule.

(C) If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

(iv) At the request of the department, a ~~supplier~~ **supply** that collects lead service line samples following partial lead service line replacement required by R 325.10604f(5) shall report the results to the department as specified in R 325.10734(1). ~~Suppliers~~ **Supplies** shall also report additional information as specified by the department under R 325.11505(2) to verify that all partial lead service line replacement activities have taken place.

(f) A ~~supplier~~ **water supply** shall provide the following public education reporting information to the department:

(i) ~~If a system~~ **A water supply that** is subject to the public education requirements in R 325.10410~~, the supplier~~ shall, within 10 days after the end of each period in which the ~~supplier~~ **supply** is required to perform public education tasks under R 325.10410~~(2)~~**(b)**, send written documentation to the department that contains both of the following:

(A) A demonstration that the ~~supplier~~ **supply** has delivered the public education materials that meet the content requirements in R 325.10410~~(1)~~**(2)** and the delivery requirements in R 325.10410~~(2) and~~ (3).

(B) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the ~~supplier~~ **supply** delivered public education materials during the period in which the ~~supplier~~ **supply** was required to perform public education tasks.

(ii) Unless required by the department, a ~~supplier~~ **supply** that previously has submitted the information required by paragraph (i)(B) of this subdivision need not resubmit the information required by paragraph (i)(B) of this subdivision, if there have been no changes in the distribution list and the ~~supplier~~ **supply** certifies that the public education materials were distributed to the same list submitted previously.

(iii) Not later than 3 months following the end of the monitoring period, each supply shall mail a sample copy of the consumer notification of tap results to the department along with a certification that the notification has been distributed in a manner consistent with the requirements of R 325.10410(3).

(g) A ~~supplier~~ **water supply** that collects sampling data in addition to that required by this part shall report the results to the department within the first 10 days following the end of the applicable monitoring period specified in R 325.10710a, R 325.10710b, and R 325.10710c during which the samples are collected.

(h) A ~~supplier~~ **water supply** is not required to report the ninetieth percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by subrule (1)(a)(i)(D) of this rule if ~~both~~ **all** of the following provisions are satisfied:

(i) The department has previously notified the ~~supplier~~ **supply** that it will calculate the ~~system's~~ **supply's** ninetieth percentile lead and copper concentrations, based on the lead and copper tap results submitted ~~pursuant to~~ **under** paragraph (ii)(A) of this subdivision, and has specified a date before the end of the applicable monitoring period by which the ~~supplier~~ **supply** shall provide the results of lead and copper tap water samples.

(ii) The ~~supplier~~ **supply** has provided the following information to the department by the date specified in paragraph (i) of this subdivision:

(A) The results of all tap samples for lead and copper including the location of each site and the criteria under R 325.10710a(1)(c), (d), (e), (f), or (g), under which the site was selected for the system's sampling pool, ~~pursuant to~~ **under** subdivision (a)(i) of this subrule.

(B) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed.

(iii) The department has provided the results of the ninetieth percentile lead and copper calculations, in writing, to the ~~supplier~~ **supply** before the end of the monitoring period.

R 325.10717b Special monitoring.

Rule 717b. (1) ~~Unregulated contaminant monitoring requirements are contained in 40 CFR §141.40. The department adopts by reference 40 CFR §141.40 (October 29, 2002). The adopted material is available from the superintendent of documents at the address in R 325.10116(b) for a cost of $61.00 at the time of adopted of these rules. The adopted material is available for inspection, or copies are available at no cost from the offices of the department at the address in R 325.10116(a).~~

~~(2)~~ All of the following provisions apply to sodium monitoring:

(a) A ~~supplier of water for a~~ community water ~~system~~ **supply** shall collect and analyze 1 sample per plant at the entry point to the distribution system to determine sodium concentration levels. **A community water supply is also considered "water supply" or "supply" in this rule.** Samples shall be collected and analyzed annually for a ~~system~~ **supply** that utilizes surface water sources in whole or in part and ~~not less than~~ **at least** once every 3 years for a ~~system~~ **supply** that utilizes solely ground water sources. The minimum number of samples required to be taken by the ~~system~~ **supply** shall be based on the number of treatment plants used by the ~~system~~ **supply**, except that multiple wells drawing raw water from a single aquifer may be considered 1 treatment plant for determining the minimum number of samples.

(b) The ~~supplier of water~~ **supply** shall report to the department the results of the analyses for sodium as required in R 325.10734(1). If the department requires more than annual sampling, then the ~~supplier~~ **supply** shall report the average sodium concentration as required in R 325.10734(1) after taking the last sample used for the annual average.

(c) The ~~supplier~~ **supply** shall notify the local health department of the sodium levels within 3 months in writing. The ~~supplier~~ **supply** shall send a copy of the written notice to the state within 10 days of its issuance. The ~~supplier~~ **supply** is not required to send written notice to the local health department when the department provides the notice instead of the ~~supplier~~ **supply**.

~~(3)~~ **(2)** An analysis for a contaminant or parameter listed in this rule shall be conducted only by laboratories certified to conduct that analysis under part 27 of these rules or approved by the United States EPA.

R 325.10717c ~~VOC; reporting.~~ **Rescinded.**

Rule 717c. ~~The owner of a system who is required to monitor under this part and who uses a department certified or provisionally certified laboratory other than the department's laboratory shall send a copy of the results to the department within 30 days of the receipt of the results.~~

R 325.10719e Disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors; monitoring requirements.

Rule 719e. (1) This rule applies as set forth in R 325.10610**b**. All of the following provisions are general monitoring requirements:

(a) Supplier~~s~~ shall take all samples during normal operating conditions.

(b) Supplier~~s~~ may consider multiple wells drawing water from a single aquifer as 1 treatment plant for determining the minimum number of TTHM and HAA5 samples required, with department approval. This approval will be granted in writing if the ~~supplier~~ **supply** can demonstrate that the finished water quality characteristic of all entry points to the distribution system drawing from the identified aquifer, whether served by multiple wells or a single well, are similar and are expected to react alike in terms of the formation of disinfection byproducts. To demonstrate this, the ~~supplier~~ **supply** shall arrange for a study to be prepared by an individual or firm considered qualified to perform this work, such as a hydrogeologist, geologist, or engineer. All of the following provisions apply to the study:

(i) The study shall consider well construction and geology, including all of the following:

(A) Well locations marked on a topographical map.

(B) Well depths.

(C) Well logs showing geological strata, identifying water production zones, screened or slotted areas, and grouting of the annular space.

(D) Static water levels.

(E) Aquifer studies and maps.

(F) Treatment applied.

(ii) The study shall consider water characteristics and chemistry of each well including all of the following:

(A) Field pH.

(B) Field temperatures.

(C) Specific conductivity.

(D) Total organic carbon.

(E) Analyses of common ions with a calculated cation/ion balance, such as calcium, magnesium, iron, manganese, sodium sulfate, alkalinity, and chloride.

(iii) The department may require disinfection byproducts monitoring at various entry points to the distribution system to determine if the study conclusions are correct.

(iv) Results of disinfection byproducts monitoring may be used instead of the study if all entry points to the distribution system drawing from the identified aquifer show that the levels are below the MCLs.

(c) Failure to monitor in accordance with the monitoring plan required under subrule (5) of this rule is a monitoring violation.

(d) Failure to monitor will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the ~~supplier's~~ **supply's** failure to monitor makes it impossible to determine compliance with MCLs or MRDLs.

(e) Supplier~~s~~ shall use only data collected under this rule to qualify for reduced monitoring.

(2) All of the following provisions are monitoring requirements for disinfection byproducts:

(a) All of the following provisions are TTHM and HAA5 monitoring requirements:

(i) Supplier~~s~~ shall conduct routine monitoring at the frequency indicated in table 1 of this rule:

Table 1 Routine monitoring frequency for TTHM and HAA5

*Type of ~~system~~ **supply***	*Minimum monitoring frequency*	*Sample location in the distribution system*
Subpart H ~~system~~ **supply** serving 10,000 or more people.	4 water samples per quarter per treatment plant.	Not less than 25% of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account the number of persons served, different sources of water, and different treatment methods[1].
Subpart H ~~system~~ **supply** serving from 500 to 9,999 people.	1 water sample per quarter per treatment plant.	Locations representing maximum residence time[1].
Subpart H ~~system~~ **supply** serving fewer than 500 people.	1 sample per year per treatment plant during month of warmest water temperature.	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than 1 sample is taken) exceeds the MCL, the ~~system~~ **supply** shall increase monitoring to 1 sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the ~~system~~ **supply** meets criteria in paragraph (iv) of this subdivision.
~~System~~ **Supply** using only ground water not under direct influence of surface water using chemical disinfectant and serving 10,000 or more people.	1 water sample per quarter per treatment plant[2].	Locations representing maximum residence time[1].
~~System~~ **Supply** using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 people.	1 sample per year per treatment plant[2] during month of warmest water temperature.	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than 1 sample is taken) exceeds the MCL, the ~~system~~ **supply** shall increase monitoring to 1 sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the ~~system~~ **supply** meets criteria in paragraph (iv) of this subdivision.

[1] If a ~~supplier~~ **supply** elects to sample more frequently than the minimum required, not less than 25% of all samples collected each quarter, including those taken in excess of the required frequency, shall be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples shall be taken at locations representative of at least average residence time in the distribution system.

[2] Multiple wells drawing water from a single aquifer may be considered 1 treatment plant for determining the minimum number of samples required, with department approval.

(ii) Supplier~~s~~ may reduce monitoring, except as otherwise provided, under table 2 of this rule:

Table 2 Reduced monitoring frequency for TTHM and HAA5

*If the ~~system~~ **supply** is a...*	*The ~~supplier~~ **supply** may reduce monitoring if the ~~supplier~~ **supply** has monitored at least 1 year and the...*	*To this level*
Subpart H ~~system~~ **supply** serving 10,000 or more people which has a source water annual average TOC level, before any treatment, that is less than or equal to 4.0 mg/l.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l.	1 sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
Subpart H ~~system~~ **supply** serving from 500 to 9,999 people which has a source water annual average TOC level, before any treatment, that is less than or equal to 4.0 mg/l.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l.	1 sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature. Note: any subpart H ~~system~~ **supply** serving fewer than 500 people may not reduce its monitoring to less than 1 sample per treatment plant per year.
~~System~~ **Supplies** using only ground water not under direct influence of surface water using chemical disinfectant and serving 10,000 or more people.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l.	1 sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
~~System~~ **supply** using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 people.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l for 2 consecutive years, or TTHM annual average is less than or equal to 0.020 mg/l and HAA5 annual average is less than or equal to 0.015 mg/l for 1 year.	1 sample per treatment plant per 3 year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the 3-year cycle beginning on January 1 following quarter in which ~~system~~ **supply** qualifies for reduced monitoring.

(iii) **In order to qualify for reduced monitoring for TTHM and HAA5 under subparagraph (ii) of this subdivision, subpart H supplies not monitoring under subrule (4) of this rule shall take monthly TOC samples every 30 days at a location before treatment. In addition to meeting other criteria for reduced monitoring in paragraph (ii) of this subdivision, the source water TOC running annual average shall be less than or equal to 4.0 mg/L, based on the most recent four quarters of monitoring, on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5 under paragraph (ii) of this subdivision, a supply may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location before treatment.**

(iv) Supplier~~s of systems~~ on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year, for ~~systems~~ **supplies** monitoring quarterly, or the result of the sample, for ~~systems~~ **supplies** monitoring not more frequently than annually, is not more than 0.060 mg/l and 0.045 mg/l for TTHM and HAA5, respectively. Supplier~~s of systems~~ that do not meet these levels shall resume monitoring at the frequency identified in the "minimum monitoring frequency" column of table 1 of this rule, in the quarter immediately following the monitoring period in which the ~~system~~ **supply** exceeds 0.060 mg/l ~~and~~ **or** 0.045 mg/l for TTHM ~~and~~ **or** HAA5, respectively. For ~~systems~~ **supplies** using only groundwater not under the direct influence of surface water and serving fewer than 10,000 people, if either the TTHM annual average is greater than 0.080 mg/l or the HAA5 annual average is greater than 0.060 mg/l, the ~~supplier~~ **supply** shall increase monitoring to that identified in the "sample location in the distribution system" column of table 1 of this rule in the quarter immediately following the monitoring period in which the ~~system~~ **supply** exceeds 0.080 mg/l or 0.060 mg/l for TTHM or HAA5, respectively.

~~(iv)~~ **(v)** Supplier~~s of systems~~ on increased monitoring may return to routine monitoring if, after at least 1 year of monitoring, the TTHM annual average is less than or equal to 0.060 mg/l and the HAA5 annual average is less than or equal to 0.045 mg/l.

(b) ~~Suppliers of c~~**C**ommunity and nontransient noncommunity water ~~systems~~ **supplies** adding chlorine dioxide shall conduct monitoring for chlorite under all of the following provisions:

(i) All of the following provisions are routine monitoring requirements:

(A) Each day, supplier~~s~~ shall take samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the ~~supplier~~ **supply** shall take additional samples in the distribution system the following day at the locations required by paragraph (ii) of this subdivision, in addition to the sample required at the entrance to the distribution system.

(B) Each month, supplier~~s~~ shall take a 3 sample set in the distribution system. The ~~supplier~~ **supply** shall take 1 sample at each of the following locations:

(1) Near the first customer.

(2) At a location representative of average residence time.

(3) At a location reflecting maximum residence in the distribution system.

Any additional routine sampling shall be conducted in the same manner, as 3 sample sets, at the specified locations. The ~~supplier~~ **supply** may use the results of additional monitoring conducted under paragraph (ii) of this subdivision to meet the requirement for monitoring in this paragraph.

(ii) On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the ~~supplier~~ **supply** shall take 3 chlorite distribution system samples at each of the following locations:

(A) As close to the first customer as possible.

(B) In a location representative of average residence time.

(C) As close to the end of the distribution system as possible, reflecting maximum residence time in the distribution system.

(iii) Chlorite monitoring at the entrance to the distribution system required by paragraph (i)(A) of this subdivision may not be reduced. Chlorite monitoring in the distribution system required by paragraph (i)(B) of this subdivision may be reduced to 1 3 sample set per quarter after 1 year of monitoring where no individual chlorite sample taken in the distribution system under paragraph (i)(B) of this subdivision has exceeded the chlorite MCL and the ~~supplier~~ **supply** has not been required to conduct monitoring under paragraph (ii) of this subdivision. The ~~system~~ **supply** may remain on the reduced monitoring schedule until either any of the 3 individual chlorite samples taken quarterly in the distribution system under paragraph (i)(B) of this subdivision exceeds the chlorite MCL or the ~~supplier~~ **supply** is required to conduct monitoring under paragraph (ii) of this subdivision, at which time the ~~supplier~~ **supply** shall revert to routine monitoring.

(c) **Supplies using ozone shall monitor for bromate as follows:**

(i) Supplie~~r~~s using ozone shall monitor for bromate by taking 1 sample per month at the entrance to the distribution system for each treatment plant in the ~~system~~ **supply** using ozone. ~~Monitoring may not be reduced.~~

(ii) A supply required to monitor for bromate may reduce monitoring from monthly to quarterly, if the supply's running annual average bromate concentration is less than or equal to 0.0025 mg/L based on monthly bromate measurements under paragraph (i) of this subdivision for the most recent four quarters. The supply may remain on reduced monitoring as long as the running annual average of quarterly bromate sample are less than or equal to 0.0025 mg/L. If the running annual average bromate concentration is greater than 0.0025 mg/L, the supply shall resume routine monitoring required by paragraph (i) of this subdivision.

(3) Both of the following provisions are monitoring requirements for disinfectant residuals:

(a) ~~Suppliers of c~~**C**ommunity and nontransient noncommunity water ~~systems~~ **supplies** adding chlorine or chloramines shall measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in ~~R 325.10705 and R 325.10706~~ **R 325.10704 to R 325.10709**. Monitoring may not be reduced.

(b) All of the following provisions are chlorine dioxide monitoring requirements:

(i) ~~Suppliers of c~~**C**ommunity, nontransient noncommunity, and transient noncommunity water ~~systems~~ **supplies** that use chlorine dioxide shall monitor for chlorine dioxide by taking daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the ~~supplier~~ **supply** shall take samples in the distribution system the following day at the locations required by paragraph (ii) of this subdivision, in addition to the sample required at the entrance to the distribution system.

(ii) On each day following a routine sample monitoring result that exceeds the MRDL, the ~~supplier~~ **supply** is required to take 3 chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system, that is, no booster chlorination, the ~~supplier~~ **supply** shall take 3 samples as close to the first customer as possible, at intervals of at least 6 hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are 1 or more disinfection addition points after the entrance to the distribution system,

that is, booster chlorination, the ~~supplier~~ **supply** shall take 1 sample at each of the following locations:

(A) As close to the first customer as possible.

(B) In a location representative of average residence time.

(C) As close to the end of the distribution system as possible, reflecting maximum residence time in the distribution system.

(iii) Chlorine dioxide monitoring may not be reduced.

(4) Monitoring requirements for disinfection byproduct precursors (DBPP) are as follows:

(a) S~~uppliers of s~~ubpart H ~~systems~~ **supplies** using conventional filtration shall monitor each treatment plant for TOC not later than the point of combined filter effluent turbidity monitoring and representative of the treated water. Supplie~~r~~s shall also monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." At the same time as the source water sample is taken, supplie~~r~~s shall monitor for alkalinity in the source water before any treatment. Supplie~~r~~s shall take 1 paired sample and 1 source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

(b) S~~uppliers of s~~ubpart H ~~systems~~ **supplies** with an average treated water TOC of less than 2.0 mg/l for 2 consecutive years, or less than 1.0 mg/l for 1 year, may reduce monitoring for both TOC and alkalinity to 1 paired sample and 1 source water alkalinity sample per plant per quarter. The ~~supplier~~ **supply** shall revert to routine monitoring in the month following the quarter when the annual average treated water TOC is greater than or equal to 2.0 mg/l.

(5) Supplie~~r~~s subject to this rule shall develop and implement a monitoring plan. The ~~supplier~~ **supply** shall maintain the plan and make it available for inspection by the department and the general public not more than 30 days following the applicable compliance dates in subrule (1) of this rule. S~~uppliers of s~~ubpart H ~~systems~~ **supplies** serving more than 3,300 people shall submit a copy of the monitoring plan to the department not later than the date of the first report required under R 325.10719f. At a minimum, the plan shall include all of the following elements:

(a) Specific locations and schedules for collecting samples for parameters included in ~~R 325.10610, R 325.10610a,~~ R 325.10610b, R 325.10610c, or this rule.

(b) The method the ~~supplier~~ **supply** will use to calculate compliance with MCLs, MRDLs, and treatment techniques.

(c) If approved for monitoring as a consecutive ~~system~~ **supply**, or if providing water to a consecutive ~~system~~ **supply**, under ~~the provisions~~ of R 325.10733, the sampling plan shall reflect the entire distribution system.

R 325.10719g Initial distribution system evaluations

Rule 719g. (1) This rule applies to a community water supply that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light and this rule applies to a nontransient noncommunity water supply that serves not fewer than 10,000 people and uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

(2) Title 40 CFR Part 141 Subpart U, being 40 CFR 141.600 to 40 CFR 141.605, which pertains to Initial Distribution System Evaluations, is adopted by reference. The adopted material is available for purchase for a cost at the time of adoption of these rules of $61.00 from the Superintendent of Documents, United States

Government Printing Office, Post Office Box 371954, Pittsburgh, PA 15250-7954, telephone 202-512-1800 or accessible on the Internet at http://www.gpoaccess.gov/index.html. The adopted material is available for inspection at the offices of the department at 525 West Allegan Street, P.O. Box 30273, Lansing, Michigan, 48909-7773, telephone 517-241-1300, Internet address: http://www.michigan.gov/deq. Both of the following apply to the adopted material:

(a) Subpart U consists of all of the following sections of Title 40 CFR Part 141:

(i) 40 CFR 141.600 General requirements.

(ii) 40 CFR 141.601 Standard monitoring.

(iii) 40 CFR 141.602 System specific studies.

(iv) 40 CFR 141.603 40/30 certification.

(v) 40 CFR 141.604 Very small system waivers.

(vi) 40 CFR 141.605 Subpart V compliance monitoring location recommendations.

(b) For the purposes of this section, the following substitutions shall be made for terms used in the portions of 40 CFR 141 listed in subdivision (a) of this subrule.

(i) "[Sec.]141.29" means R 325.10733.

(ii) "[Sec.]141.64" means R 325.10610.

(iii) "[Sec.]141.131" means using analytical methods for disinfection byproducts in R 325.10605 and having analyzed in a laboratory meeting the requirements of R 325.12707.

(iv) "[Sec.]141.132" means R 325.10719e.

(v) "EPA" means the U.S. Environmental Protection Agency.

(vi) "State" means department.

(vii) "Subpart L" means R 325.10610 to R 325.10610c and R 325.10719e to R 325.10719f.

(viii) "Subpart V" means R 325.10610d and R 325.10719h to R 325.10719n.

R 325.10719h Disinfection byproducts; routine monitoring.

Rule 719h. (1) A community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d and that submitted an IDSE report shall begin monitoring at the locations and months the supply has recommended in the IDSE report submitted under 40 CFR 141.605 as adopted by reference in R 325.10719g following the schedule in R 325.10610d(3), unless the department requires other locations or additional locations after its review. If the supply submitted a 40/30 certification under 40 CFR 141.603 as adopted by reference in R 325.10719g or the supply qualified for a very small system waiver under 40 CFR 141.604 as adopted by reference in R 325.10719g or the supply is a nontransient noncommunity water supply serving less than 10,000, then the supply shall monitor at the location or locations and dates identified in the monitoring plan in R 325.10719e(5), updated as required by R 325.10719i. These community and noncommunity water supplies are also considered "water supplies" or "supplies" in this rule and R 325.10719i to R 325.10719n.

(2) The supply shall monitor at no fewer than the number of locations identified in the following table:

Source Water Type	Population size category	Monitoring Frequency [1]	Distribution system monitoring locations total per monitoring period [2]
Subpart H	less than 500	per year	2
Subpart H	500 to 3,300	per quarter	2
Subpart H	3,301 to 9,999	per quarter	2
Subpart H	10,000 to 49,999	per quarter	4
Subpart H	50,000 to 249,999	per quarter	8
Subpart H	250,000 to 999,999	per quarter	12
Subpart H	1,000,000 to 4,999,999	per quarter	16
Subpart H	greater than or equal to 5,000,000	per quarter	20
Groundwater	less than 500	per year	2
Groundwater	500 to 9,999	per quarter	2
Groundwater	10,000 to 99,999	per quarter	4
Groundwater	100,000 to 499,999	per quarter	6
Groundwater	greater than or equal to 500,000	per quarter	8

[1] All supplies shall monitor during month of highest DBP concentrations.
[2] Supplies on quarterly monitoring shall take dual sample sets every 90 days at each monitoring location, except for subpart H supplies serving 500 to 3,300. Supplies on annual monitoring and subpart H supplies serving 500 to 3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. Only one location with a dual sample set per monitoring period is needed if highest TTHM and HAA5 concentrations occur at the same location, (and month, if monitored annually).

(3) If the supply is an undisinfected supply that begins using a disinfectant other than UV light after the dates in 40 CFR Subpart U, as adopted by reference in R 325.10719g, for complying with the Initial Distribution System Evaluation requirements, the supply shall consult with the department to identify compliance monitoring locations for R 325.10610d and R 325.10719h to R 325.10719n. The supply shall then develop a monitoring plan under R 325.10719i that includes those monitoring locations.

R 325.10719i Disinfection byproducts; monitoring plan.
Rule 719i. (1) Both of the following provisions apply to developing the monitoring plan for community or nontransient noncommunity water supplies that are subject to disinfection byproducts requirements of R 325.10610d:
(a) The supply shall develop and implement a monitoring plan to be kept on file for department and public review. The monitoring plan shall contain all of the following elements and be complete no later than the date the supply conducts the initial monitoring under R 325.10610d and R 325.10719h to R 325.10719n:
(i) Monitoring locations;
(ii) Monitoring dates;
(iii) Compliance calculation procedures; and

(iv) Monitoring plans for the other supplies in the combined distribution system if the department has reduced monitoring requirements under R 325.10733.

(b) A supply that was not required to submit an IDSE report under either 40 CFR 141.601 or 40 CFR 141.602, and that does not have sufficient R 325.10719e monitoring locations to identify the required number of monitoring locations indicated in 40 CFR 141.605(b) for compliance with R 325.10719h to R 325.10719j, shall identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of monitoring locations have been identified for compliance with R 325.10719h to R 325.10719j. The supply shall also provide the rationale for identifying the locations as having high levels of TTHM or HAA5. If the supply has more R 325.10719e monitoring locations than identified in 40 CFR 141.605(b) for compliance with R 325.10719h to R 325.10719j, the supply shall identify which monitoring locations the supply will use for compliance with R 325.10719h to R 325.10719j by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of monitoring locations have been identified. The 40 CFR 141 sections cited in this subdivision are adopted by reference in R 325.10719g.

(2) A subpart H supply serving greater than 3,300 people shall submit a copy of the monitoring plan to the department before the date the supply conducts the initial monitoring under R 325.10610d and R 325.10719h to R 325.10719n, unless the IDSE report submitted under 40 CFR 141.600 to 40 CFR 141.605, as adopted by reference in Rule 325.10719g, contains all the information required by this section.

(3) The supply may revise the monitoring plan to reflect changes in treatment, distribution system operations and layout, including new service areas, or other factors that may affect TTHM or HAA5 formation, or for department approved reasons, after consultation with the department regarding the need for changes and the appropriateness of changes. If the supply changes monitoring locations, the supply shall replace existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels. The department may also require modifications in the monitoring plan. A subpart H supply serving greater than 3,300 people shall submit a copy of the modified monitoring plan to the department before the date the supply is required to comply with the revised monitoring plan.

R 325.10719j Disinfection byproducts; reduced monitoring.

Rule 719j. (1) The community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d may reduce monitoring any time the LRAA is less than or equal to 0.040 mg/L for TTHM and less than or equal to 0.030 mg/L for HAA5 at all monitoring locations. The supply may only use data collected under R 325.10610b to R 325.10610d, R 325.10719e to R 325.10719f, and R 325.10719h to R 325.10719n to qualify for reduced monitoring. In addition, the source water annual average TOC level, before treatment, shall be less than or equal to 4.0 mg/L at each treatment plant treating surface water or groundwater under the direct influence of surface water, based on monitoring conducted under either R 325.10719e(2)(a)(3) or R 325.10719e(4). Reduced monitoring shall be to the level specified in the following table:

Source Water Type	Population size category	Monitoring Frequency *	Distribution system monitoring location per monitoring period
Subpart H	less than 500		monitoring may not be reduced
Subpart H	500 to 3,300	per year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
Subpart H	3,301 to 9,999	per quarter	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.
Subpart H	10,000 to 49,999	per quarter	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs.
Subpart H	50,000 to 249,999	per quarter	4 dual sample sets--at the locations with the two highest TTHM and two highest HAA5 LRAAs.
Subpart H	250,000 to 999,999	per quarter	6 dual sample sets--at the locations with the three highest TTHM and three highest HAA5 LRAAs.
Subpart H	1,000,000 to 4,999,999	per quarter	8 dual sample sets--at the locations with the four highest TTHM and four highest HAA5 LRAAs.
Subpart H	greater than or equal to 5,000,000	per quarter	10 dual sample sets--at the locations with the five highest TTHM and five highest HAA5 LRAAs.
Groundwater	less than 500	every third year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.

Groundwater	**500 to 9,999**	**per year**	**1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.**
Groundwater	**10,000 to 99,999**	**per year**	**2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.**
Groundwater	**100,000 to 499,999**	**per quarter**	**2 dual sample sets; at the locations with the highest TTHM and highest HAA5 LRAAs.**
Groundwater	**greater than or equal to 500,000**	**per quarter**	**4 dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs.**

*** Supplies on quarterly monitoring shall take dual sample sets every 90 days.**

(2) The supply may remain on reduced monitoring as long as the TTHM LRAA less than or equal to 0.040 mg/L and the HAA5 LRAA less than or equal to 0.030 mg/L at each monitoring location (for supplies with quarterly reduced monitoring) or each TTHM sample less than or equal to 0.060 mg/L and each HAA5 sample less than or equal to 0.045 mg/L (for supplies with annual or less frequent monitoring). In addition, the source water annual average TOC level, before treatment, shall be less than or equal to 4.0 mg/L at each treatment plant treating surface water or groundwater under the direct influence of surface water, based on monitoring conducted under either R 325.10719e(2)(a)(3) or R 325.10719e(4).

(3) If the LRAA based on quarterly monitoring at a monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 or if the annual (or less frequent) sample at a location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5, or if the source water annual average TOC level, before treatment, is greater than 4.0 mg/L at a treatment plant treating surface water or groundwater under the direct influence of surface water, the supply shall resume routine monitoring under R 325.10719h or begin increased monitoring if R 325.10719k applies.

(4) The department may return the supply to routine monitoring under R 325.10732.

R 325.10719k Disinfection byproducts; conditions requiring increased monitoring.

Rule 719k. (1) A community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d and that is required to monitor at a particular location annually or less frequently than annually under routine monitoring in R 325.10719h or reduced monitoring in R 325.10719j shall increase monitoring to dual sample sets once per quarter, taken

every 90 days, at all locations if a TTHM sample is greater than 0.080 mg/L or a HAA5 sample is greater than 0.060 mg/L at any location.

(2) The supply is in violation of the MCL when the LRAA exceeds the MCLs in R 325.10610(2), calculated based on four consecutive quarters of monitoring, or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters. The supply is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if the supply fails to monitor.

(3) The supply may return to routine monitoring once the supply has conducted increased monitoring for not less than four consecutive quarters and the LRAA for every monitoring location is less than or equal to 0.060 mg/L for TTHM and less than or equal to 0.045 mg/L for HAA5.

R 325.10719l Disinfection byproducts: operational evaluation levels.

Rule 719l. (1) The community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d has exceeded the operational evaluation level at a monitoring location where the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/L, or where the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/L.

(2) Both of the following provisions apply to operational evaluations:

(a) A supply that exceeds the operational evaluation level shall conduct an operational evaluation and submit a written report of the evaluation to the department no later than 90 days after being notified of the analytical result that causes the supply to exceed the operational evaluation level. The written report shall be made available to the public upon request.

(b) The operational evaluation shall include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedences. Both of the following provisions apply to limiting the scope of the operational evaluation:

(i) The supply may request and the department may allow the supply to limit the scope of the evaluation if the supply is able to identify the cause of the operational evaluation level exceedance.

(ii) The request to limit the scope of the evaluation does not extend the schedule in subrule (2)(a) of this rule for submitting the written report. The department shall approve this limited scope of evaluation in writing and the supply shall keep that approval with the completed report.

R 325.10719m Disinfection byproducts; requirements for remaining on reduced or increased TTHM and HAA5 monitoring.

Rule 719m. (1) The community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d may remain on reduced monitoring after the dates identified in R 325.10610d(3) for compliance with R 325.10610d and R 325.10719h to R 325.10719n only if the supply qualifies for a 40/30 certification under 40 CFR 141.603 or have received a very small system waiver under 40 CFR 141.604, plus the supply meets the reduced monitoring criteria in R 325.10719j(1), and the supply does not change or

add monitoring locations from those used for compliance monitoring under R 325.10719e. If the monitoring locations under R 325.10719h to R 325.10719j differ from the monitoring locations under R 325.10719e, the supply may not remain on reduced monitoring after the dates identified in R 325.10610d(3) for compliance with R 325.10610d and R 325.10719h to R 325.10719n. The 40 CFR 141.603 and 40 CFR 141.604 are adopted by reference in R 325.10719g.

(2) The supply that was on increased monitoring under R 325.10719e(2)(a), shall remain on increased monitoring until the supply qualifies for a return to routine monitoring under R 325.10719k(3). The supply shall conduct increased monitoring under R 325.10719k at the monitoring locations in the monitoring plan developed under R 325.10719i beginning at the date identified in R 325.10610d(3) for compliance with R 325.10610d and R 325.10719h to R 325.10719n and remain on increased monitoring until the supply qualifies for a return to routine monitoring under R 325.10719k.

R 325.10719n Disinfection byproducts; reporting and recordkeeping requirements.

Rule 719n. (1) A community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d shall report all of the following:

(a) The supply shall report all of the following information for each monitoring location to the department within 10 days of the end of a quarter in which monitoring is required:

(i) Number of samples taken during the last quarter.

(ii) Date and results of each sample taken during the last quarter.

(iii) Arithmetic average of quarterly results for the last four quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter. If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the supply shall report this information to the department as part of the first report due following the compliance date or anytime thereafter that this determination is made. If the supply is required to conduct monitoring at a frequency that is less than quarterly, the supply shall make compliance calculations beginning with the first compliance sample taken after the compliance date, unless the supply is required to conduct increased monitoring under R 325.10719k.

(iv) Whether, based on R 325.10610(2), R 325.10610d and R 325.10719h to R 325.10719n, the MCL was violated at a monitoring location.

(v) Any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.

(b) A subpart H supply that is seeking to qualify for or remain on reduced TTHM/HAA5 monitoring shall report all of the following source water TOC information for each treatment plant that treats surface water or groundwater under the direct influence of surface water to the department within 10 days of the end of a quarter in which monitoring is required:

(i) The number of source water TOC samples taken each month during last quarter.

(ii) The date and result of each sample taken during last quarter.

(iii) The quarterly average of monthly samples taken during last quarter or the result of the quarterly sample.

(iv) The running annual average (RAA) of quarterly averages from the past four quarters.

(v) Whether the RAA exceeded 4.0 mg/L.

(c) The department may choose to perform calculations and determine whether the MCL was exceeded or the supply is eligible for reduced monitoring instead of having the supply report that information.

(2) The supply shall retain monitoring plans and monitoring results of monitoring conducted under R 325.10610d and R 325.10719h to R 325.10719n, as required by R 325.11506(1)(g).

R 325.10720 Filtration and disinfection; filtration sampling requirements

Rule 720. (1) S~~uppliers of s~~ubpart H ~~systems~~ **supplies** shall monitor under this rule to determine compliance with R 325.10611a and R 325.10611b.

(2) All of the following provisions are turbidity monitoring requirements:

(a) Supplie~~r~~s shall collect samples and perform measurements for turbidity at locations representative of filtered water at regular intervals at least once every 4 hours while the treatment plant is in operation.

(b) A public water ~~supplier~~ **supply** may substitute continuous turbidity monitoring for grab sample monitoring if the continuous measurement is validated for accuracy on a regular basis using a protocol approved by the department. Readings taken from a continuous recording turbidimeter at regular intervals at least once every 4 hours may be used to determine compliance with the treatment technique under R 325.10611b. The turbidimeter shall be calibrated using the procedure specified by the manufacturer.

(c) Supplie~~r~~s ~~of systems~~ using conventional or direct filtration shall conduct continuous monitoring of turbidity for each individual filter and shall calibrate turbidimeters using the procedure specified by the manufacturer. Supplie~~r~~s shall record the results of individual filter monitoring every 15 minutes. Until December 31, 2004, this subdivision applies only to ~~systems~~ **supplies** serving 10,000 or more people. Beginning January 1, 2005, this subdivision also applies to ~~systems~~ **supplies** serving fewer than 10,000 people.

(d) If there is a failure in the continuous turbidity monitoring equipment described in subdivision ~~(b)~~ **(c)** of this subrule, then the ~~supplier~~ **supply** shall conduct grab sampling every 4 hours instead of continuous monitoring, but for not more than 5 working days after the failure of the equipment for ~~systems~~ **supplies** serving 10,000 or more people or 14 days for ~~systems~~ **supplies** serving fewer than 10,000 people before a violation is incurred.

(e) If the ~~system~~ **supply** serves fewer than 10,000 people and consists of only 2 or fewer filters, then the ~~supplier~~ **supply** may conduct continuous monitoring of combined filter effluent turbidity instead of individual filter effluent turbidity monitoring. Continuous monitoring shall meet the same requirements in subdivisions (c) and (d) of this subrule.

(3) All of the following provisions are disinfectant residual monitoring requirements at the entry points to the distribution system:

(a) Supplie~~r~~s ~~of systems~~ serving more than 3,300 people shall monitor for residual disinfectant concentration at an entry point to the distribution system on a continuous basis.

(b) Supplie~~r~~s ~~of systems~~ serving fewer than 3,301 people shall monitor for residual disinfectant concentration at an entry point to the distribution system at a frequency set forth in table 1 of this rule, and, if more than 1 sample is required per day, supplie~~r~~s shall collect samples at times evenly spaced throughout the operational day.

Table 1 Residual disinfectant concentration sampling frequencies

~~System~~ **Supply** size by population	Samples per day
500 or fewer people	1
501 to 1,000 people	2
1,001 to 2,500 people	3
2,501 to 3,300 people	4

(c) ~~Suppliers~~ **Under R 325.10611a, supplies** shall maintain a residual disinfectant concentration entering the distribution system of not less than 0.2 milligrams per liter. If the residual disinfectant concentration drops below this level at any time, then the ~~supplier~~ **supply** shall notify the department as soon as possible, but not later than the end of the next business day. In addition, the ~~supplier of water~~ **supply** shall notify the department by the end of the next business day whether or not the residual disinfectant concentration was restored to not less than 0.2 milligrams per liter within 4 hours.

(4) The residual disinfectant concentration shall be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in R 325.10704 to R 325.10709. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) may be measured instead of residual disinfectant concentration.

R 325.10720b Enhanced treatment for Cryptosporidium; source water monitoring.

Rule 720b. (1) This rule applies to subpart H supplies as set forth in R 325.10611d.

(2) Title 40 CFR 141 Subpart W sections pertaining to source water monitoring requirements, being 40 CFR 141.701 to 40 CFR 141.707, are adopted by reference, except that provisions pertaining to unfiltered systems are not adopted by reference as specified in subdivision (c) of this subrule. The adopted material is available for purchase for a cost at the time of adoption of these rules of $61.00 from the Superintendent of Documents, United States Government Printing Office, Post Office Box 371954, Pittsburgh, PA 15250 7954, telephone 202-512-1800 or accessible on the Internet at http://www.gpoaccess.gov/index.html. The adopted material is available for inspection at the offices of the department at 525 West Allegan Street, P.O. Box 30273, Lansing, Michigan, 48909-7773, telephone 517-241-1300, Internet address: http://www.michigan.gov/deq. All of the following apply to the adopted material:

(a) Subpart W consists of all of the following sections of Title 40 CFR Part 141:

(i) 40 CFR 141.701 Source water monitoring.

(ii) 40 CFR 141.702 Sampling schedules.

(iii) 40 CFR 141.703 Sampling locations.

(iv) 40 CFR 141.704 Analytical methods.

(v) 40 CFR 141.705 Approved laboratories.

(vi) 40 CFR 141.706 Reporting source water monitoring results.

(vii) 40 CFR 141.707 Grandfathering previously collected data.

(b) For the purposes of this rule, the following substitutions shall be made for terms used in the portions of 40 CFR 141 listed in subdivision (a) of this subrule.

(i) "[Sec.]141.74" means R 325.10605.

(ii) "[Sec.]141.173(b) or [Sec.]141.552(a), as applicable," means R 325.10611b(3).

(iii) "[Sec.]141.710 or [Sec.]141.712" means R 325.10611e.

(iv) "[Sec.]141.710 or determination of the mean Cryptosporidium level under [Sec.]141.712, as applicable" means R 325.10611e.

(v) "[Sec.]141.710(b)(5) or [Sec.]141.712(a)(3), as applicable," means R 325.10611e(2)(e).

(vi) "[Sec.]141.711" means R 325.10611f.

(vii) "[Sec.]141.711 or [Sec.]141.712, as applicable," means R 325.10611f.

(viii) "[Sec.]141.713" means R 325.10611g.

(ix) "[Sec.]141.717(c)" means R 325.10611j(3).

(x) "EPA" means the U.S. Environmental Protection Agency.

(xi) "State" means department.

(c) All of the following portions of 40 CFR 141, Subpart W are not adopted by reference under this rule:

(i) 40 CFR 141.701(a)(2).

(ii) 40 CFR 141.701(a)(6).

(iii) 40 CFR 141.701(d)(2).

(iv) Other portions of 40 CFR 141.701 pertaining to unfiltered water systems.

R 325.10720c Enhanced treatment for Cryptosporidium; disinfection profiling and benchmarking; making a significant change in disinfection practice.

Rule 720c. Following the completion of initial source water monitoring under 40 CFR 141.701(a), as adopted by reference in R 325.10720b, a Subpart H supply that is subject to R 325.10611d and that plans to make a significant change to its disinfection practice, as defined in R 325.10722(4)(a), shall develop disinfection profiles and calculate disinfection benchmarks for Giardia lamblia and viruses as described in R 325.10720d. Before changing the disinfection practice, the Subpart H supply shall notify the department and shall include in this notice all of the information in R 325.10722(4)(b)(i) to (iv).

R 325.10720d Enhanced treatment for Cryptosporidium; developing the disinfection profile and benchmark.

Rule 720d. (1) Subpart H supplies required to develop disinfection profiles under R 325.10720c shall follow the requirements of this rule. These Subpart H supplies are also considered "supplies" in this rule. Supplies shall monitor under subrule (2) of this rule to determine the total log inactivation for Giardia lamblia and viruses. Supplies shall determine log inactivation for Giardia lamblia through the entire plant, based on the protocol in R 325.10722(3)(b). Supplies shall determine log inactivation for viruses through the entire treatment plant, based on the protocol in R 325.10722(3)(c).

(2) Subpart H supplies with a single point of disinfectant application before the entrance to the distribution system shall conduct the monitoring in R 325.10722(3)(a). Supplies with more than one point of disinfectant application shall conduct the monitoring in R 325.10722(3)(a) for each disinfection segment. Subpart H supplies shall monitor the parameters necessary to determine the total inactivation ratio.

(3) Instead of conducting new monitoring under subrule (2) of this rule, Subpart H supplies may elect to meet the requirements of either of the following:

(a) Supplies that have at least one year of existing data that are substantially equivalent to data collected under R 325.10722(3)(a) to meet the requirements of subule (2) of this rule may use these data to develop disinfection profiles as specified in this rule if the supply has neither made a significant change to its

treatment practice nor changed sources since the data were collected. Supplies may develop disinfection profiles using up to three years of existing data.

(b) Supplies may use a disinfection profile or profiles developed under R 325.10722 instead of developing a new profile if the supply has neither made a significant change to its treatment practice nor changed sources since the profile was developed. Supplies that have not developed a virus profile under R 325.10722 shall develop a virus profile using the same monitoring data on which the Giardia lamblia profile is based.

(4) Subpart H supplies shall calculate the total inactivation ratio for Giardia lamblia using the protocol in R 325.10722(3)(b). Supplies shall calculate the log of inactivation for viruses using the protocol in R 325.10722(3)(c).

(5) Subpart H supplies shall use the procedures in R 325.10722(4)(e) to calculate a disinfection benchmark.

R 325.10720e Enhanced treatment for Cryptosporidium; reporting and recordkeeping requirements.

Rule 720e. (1) Subpart H supplies that are subject to R 325.10611d shall report sampling schedules under 40 CFR 141.702 and source water monitoring results under 40 CFR 141.706 unless they notify the department that they will not conduct source water monitoring due to meeting the criteria of 40 CFR 141.701(d). These Subpart H supplies are also considered "supplies" in this rule. The department adopts 40 CFR 141.701, 40 CFR 141.702, and 40 CFR 141.706 by reference in R 325.10720b.

(2) Supplies shall report their Cryptosporidium bin classification as described in R 325.10611e.

(3) Supplies shall report disinfection profiles and benchmarks to the department as described in R 325.10720c to R 325.10720d before making a significant change in disinfection practice.

(4) Supplies shall report to the department under the following table for the microbial toolbox options used to comply with treatment requirements under R 325.10611f. Alternatively, the department may approve a supply to certify operation within required parameters for treatment credit rather than reporting monthly operational data for toolbox options.

Microbial Toolbox Reporting Requirements

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
(a) Watershed control program (WCP)	(i) Notice of intention to develop a new or continue an existing watershed control program.	No later than 2 years before the applicable treatment compliance date in R 325.10611g.
	(ii) Watershed control plan	No later than 1 year before the applicable treatment compliance date in R 325.10611g.

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
	(iii) Annual watershed control program status report.	Every 12 months, beginning 1 year after the applicable treatment compliance date in R 325.10611g.
	(iv) Watershed sanitary survey report.	For community water supplies, every 3 years beginning 3 years after the applicable treatment compliance date in R 325.10611g. For noncommunity water supplies, every 5 years beginning 5 years after the applicable treatment compliance date in R 325.10611g.
(b) Alternative source/intake management	Verification that supply has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results.	No later than the applicable treatment compliance date in R 325.10611g.
(c) Presedimentation	Monthly verification of all of the following: (i) Continuous basin operation. (ii) Treatment of 100% of the flow. (iii) Continuous addition of a coagulant. (iv) Not less than 0.5 log mean reduction of influent turbidity or compliance with alternative department approved performance criteria.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(d) Two stage lime softening	Monthly verification of both of the following: (i) Chemical addition and hardness precipitation occurred in 2 separate and sequential softening stages before filtration. (ii) Both stages treated 100% of the plant flow.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
(e) Bank filtration	(i) Initial demonstration of both of the following: (A) Unconsolidated, predominantly sandy aquifer. (B) Setback distance of not less than 25 ft. (0.5 log credit) or 50 ft. (1.0 log credit).	No later than the applicable treatment compliance date in R 325.10611g.
	(ii) If monthly average of daily max turbidity is greater than 1 NTU then supply shall report result and submit an assessment of the cause.	Report within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(f) Combined filter performance	Monthly verification of combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in not less than 95 percent of the 4 hour CFE measurements taken each month.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(g) Individual filter performance	Monthly verification of both of the following: (i) Individual filter effluent (IFE) turbidity levels less than or equal to 0.15 NTU in not less than 95 percent of samples each month in each filter. (ii) No individual filter greater than 0.3 NTU in 2 consecutive readings 15 minutes apart.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(h) Demonstration of performance	(i) Results from testing following a department approved protocol.	No later than the applicable treatment compliance date in R 325.10611g.
	(ii) As required by the department, monthly verification of operation within conditions of department approval for demonstration of performance credit.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
(i) Bag filters and cartridge filters	**(i) Demonstration that both of the following criteria are met: (A) Process meets the definition of bag or cartridge filtration. (B) Removal efficiency established through challenge testing that meets criteria in R 325.10611d to R 325.10611n and R 325.10720b to R 325.10720e.**	**No later than the applicable treatment compliance date in R 325.10611g.**
	(ii) Monthly verification that 100% of plant flow was filtered.	**Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.**
(j) Membrane filtration	**(i) Results of verification testing demonstrating both of the following: (A) Removal efficiency established through challenge testing that meets criteria in R 325.10611d to R 325.10611n and R 325.10720b to R 325.10720e. (B) Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline.**	**No later than the applicable treatment compliance date in R 325.10611g.**

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
	(ii) Monthly report summarizing the following: (A) All direct integrity tests above the control limit. (B) If applicable, a turbidity or alternative state approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(k) Second stage filtration	Monthly verification that 100% of flow was filtered through both stages and that first stage was preceded by coagulation step.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(l) Slow sand filtration as secondary filter.	Monthly verification that both a slow sand filter and a preceding separate stage of filtration treated 100% of flow from surface water or GWUDI sources.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(m) Chlorine dioxide	Summary of CT values for each day as described R 325.10611m.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(n) Ozone	Summary of CT values for each day as described R 325.10611m.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(o) UV	(i) Validation test results demonstrating operating conditions that achieve required UV dose.	No later than the applicable treatment compliance date in R 325.10611g.

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
	(ii) Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in R 325.10611m.	**Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.**

(5) Supplies shall retain records under R 325.11508.

R 325.10722 Filtration and disinfection; disinfection profiling and benchmarking.

Rule 722. (1) A subpart H ~~system~~ **supply** making a significant change to its disinfection practice, as described in subrule (4)(a)(i) to (iv) of this rule shall consult with the department before making the change.

(2) A subpart H community or nontransient noncommunity ~~system~~ **supply** serving fewer than 10,000 people shall develop a disinfection profile of weekly log inactivations over 52 weeks and report to the department under R 325.10720a(5). **Until the effective date of the disinfection profiling and benchmarking provisions of R 325.10720d, a supply** ~~A system~~ whose TTHM and HAA5 levels are below profiling trigger levels of 0.064 mg/l and 0.048 mg/l, respectively, are not required to develop a disinfection profile. To determine these levels, TTHM and HAA5 samples shall be collected after January 1, 1998, during the month with the warmest water temperature, and at a point of maximum resident time in the distribution system.

(3) All of the following provisions apply to disinfection profiling:

(a) To determine the total log inactivation, ~~systems~~ **supplies** shall monitor ~~during peak hourly flow, once per week on the same calendar day, over 12 consecutive months,~~ **at least weekly for a period of 12 consecutive months. If supplies monitor more frequently, the monitoring frequency shall be evenly spaced. Supplies that operate for fewer than 12 months per year shall monitor weekly during the period of operation. Supplies shall monitor** all of the following parameters:

(i) **If a disinfectant other than UV is used, the t**~~T~~emperature of the disinfected water **shall be measured** at each residual disinfect~~ed~~**ant** concentration sampling point **during peak hourly flow or at an alternative location approved by the department**.

(ii) If chlorine is used, the pH of the disinfected water **shall be measured** at each **chlorine** residual disinfect~~ed~~**ant** concentration sampling point **during peak hourly flow or at an alternative location approved by the department**.

(iii) Disinfectant contact time or times ("T") **shall be determined during peak hourly flow**.

(iv) Residual disinfectant concentration or concentrations ("C") of the water before or at the first customer and before each additional point of disinfect~~ion~~**ant application shall be measured during peak hourly flow**.

(b) **A supply shall determine log inactivation for Giardia lamblia through the entire plant, based on CT99.9 values in Tables 1.1 to 1.6, 2.1 and 3.1 of 40 CFR 141.74(b)(3)(v), June 29, 2004, as applicable. The adopted material is available for**

purchase for a cost at the time of adoption of these rules of $61.00 from the Superintendent of Documents, United States Government Printing Office, Post Office Box 371954, Pittsburgh, PA 15250 7954, telephone 202-512-1800 or accessible on the Internet at http://www.gpoaccess.gov/index.html. The adopted material is available for inspection at the offices of the department at 525 West Allegan Street, P.O. Box 30273, Lansing, Michigan, 48909-7773, telephone 517-241-1300, Internet address: http://www.michigan.gov/deq. A supply shall calculate the total logs of inactivation for Giardia lamblia as follows: ~~Use the tables in 40 CFR 141.74(b)(3)(v) to determine the appropriate CT99.9 value. The tables in 40 CFR 141.74(b)(3)(v) are adopted by reference and available from the superintendent of documents at the address in R 325.10116(b) for a cost of $61.00 at the time of adoption of these rules. The adopted material is available for inspection, or copies are available at no cost from the offices of the department at the address in R 325.10116(a). Calculate the total inactivation ratio as follows, and then multiply the value by 3.0 to determine log activation of *Giardia lamblia*:~~

(i) ~~If the system uses only 1 point of disinfectant application, then the system shall determine either of the following:~~ **A supply using only 1 point of disinfectant application shall determine the total inactivation ratio for the disinfection segment based on either of the following methods:**

(A) ~~One~~ **Determine 1** inactivation ratio ($CTcalc/CT_{99.9}$) before or at the first customer during peak hourly flow.

(B) **Determine s**~~S~~uccessive $CTcalc/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. ~~Under this alternative, the system~~ **The supply** shall calculate the total inactivation ratio by determining ($CTcalc/CT_{99.9}$) for each sequence and then adding the ($CTcalc/CT_{99.9}$) values together to determine $\sum(CTcalc/CT_{99.9})$.

(ii) ~~If the system uses~~ **A supply using** more than 1 point of disinfectant application before the first customer~~, then the system~~ shall determine the ($CTcalc/CT_{99.9}$) value of each disinfection segment immediately before the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow**. The (CTcalc/CT99.9) value of each segment and ∑(CTcalc/CT99.9) shall be calculated** using the ~~procedure~~ **method** specified in paragraph (i)(B) of this subdivision.

(iii) The supply shall determine the total logs of inactivation by multiplying the value calculated in paragraphs (i) or (ii) of this subdivision by 3.0.

(c) ~~If the system~~ **A supply that** uses chloramines, ozone, or chlorine dioxide for primary disinfection**, and a supply subject to R 325.10720d**, ~~then the system~~ shall calculate the logs of inactivation for viruses **through the entire treatment plant based on CT99.99 values in the tables in Appendix B of the LT1ESWTR Disinfection Profiling and Benchmarking Technical Guidance Manual, May 2003, as applicable,** and develop a~~n additional~~ disinfection profile for viruses. ~~Use the tables of CT values for 4-log inactivation of viruses in Appendix B of the LT1ESWTR Disinfection Profiling and Benchmarking Technical Guidance Manual, May 2003, to determine the appropriate CT99.99 value.~~ The tables in the previous sentence are adopted by reference and available from Educational REALMS (document C-900) at 1929 Kenny Road, Columbus, Ohio 43210-1080, Internet address www.stemworks.org, telephone number 800-276-0462, for a cost of $32.50 at the time of adoption of these rules **or accessible on the Internet at http://www.epa.gov/safewater/mdbp/lt1eswtr.html**. The adopted material is available for inspection, or copies are available at no cost from the offices of the department~~ at the address in R 325.10116(a). Calculate the total inactivation ratio in the following manner, and then multiply the value by 4.0 to determine log activation of viruses:~~ **at 525 West Allegan Street, P.O. Box 30273, Lansing, Michigan, 48909-**

7773, telephone 517-241-1300, Internet address: http://www.michigan.gov/deq. A supply shall calculate the total log of inactivation for viruses as follows:

(i) ~~If the system uses only 1 point of disinfectant application, then the system shall determine either of the following:~~ **A supply using only 1 point of disinfection application shall determine the total inactivation ratio for the disinfection segment based on either of the following methods:**

(A) ~~One~~ **Determine 1** inactivation ratio ($CTcalc/CT_{99.99}$) before or at the first customer during peak hourly flow.

(B) **Determine s**~~S~~uccessive $CTcalc/CT_{99.99}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. ~~Under this alternative, the system~~ **The supply** shall calculate the total inactivation ratio by determining ($CTcalc/CT_{99.99}$) for each sequence and then adding the ($CTcalc/CT_{99.99}$) values together to determine $\sum(CTcalc/CT_{99.99})$.

(ii) ~~If the system uses~~ **A supply using** more than 1 point of disinfectant application before the first customer~~, then the system~~ shall determine the ($CTcalc/CT_{99.99}$) value of each disinfection segment immediately before the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow**. The (CTcalc/CT99.99) value of each segment and ∑(CTcalc/CT99.99) shall be calculated** using the ~~procedure~~ **method** specified in paragraph (i)(B) of this subdivision.

(iii) The supply shall determine the total logs of inactivation by multiplying the value calculated in paragraphs (i) or (ii) of this subdivision by 4.0.

(d) The disinfection profile of the 52 measurements of log inactivations shall be represented in a graphic form, such as a spreadsheet and shall be retained and be available for review by the department as part of a sanitary survey. The data shall be used to create the disinfection benchmark under subrule (4) of this rule.

(4) A subpart H ~~system~~ **supply** that is required to develop a disinfection profile under subrule (2) of this rule shall develop a disinfection benchmark if the ~~system~~ **supply** makes a significant change to the disinfection practice. The ~~system~~ **supply** shall consult with the department for approval before implementing a significant disinfection practice change. An approved significant change in disinfection practices shall not jeopardize current levels of disinfection. All of the following provisions apply to disinfection benchmarking:

(a) Significant changes to disinfection practice include all of the following:

(i) Changes to the point of disinfection.

(ii) Changes to the disinfectant or disinfectants used in the treatment plant.

(iii) Changes to the disinfection process.

(iv) Any other modification identified by the department ~~that affects~~ **as a significant change to** disinfection practices.

(b) If the ~~system~~ **supply** is considering a significant change to its disinfection practice, it shall calculate a disinfection benchmark or benchmarks as described in subdivisions (c) and (d) of this subrule **or in subdivision (e) of this subrule, as applicable,** and provide the benchmark or benchmarks to the department. The ~~system~~ **supply** may only make a significant disinfection practice change after consulting with the department for approval. The ~~system~~ **supply** shall submit all of the following information to the department as part of the consultation and approval process:

(i) A description of the proposed change **in disinfection practice**.

(ii) **Until the effective date of R 325.10720d, t**~~T~~he disinfection profile for *Giardia lamblia*, and, if necessary, viruses, and disinfection benchmark. **Beginning the effective date of R 325.10720d, a completed disinfection profile and disinfection benchmark for Giardia lamblia and viruses as described in R 325.10720d.**

(iii) An analysis of how the proposed change will affect the current levels of disinfection.

(iv) Any additional information requested by the department to demonstrate the results or benefits, or both, of the change to the disinfection practice.

(c) **Until the effective date of R 325.10720d, i**~~I~~f the system is making a significant change to its disinfection practice, then it shall calculate a disinfection benchmark using the following procedure:

(i) Step 1: Using the data collected to develop the disinfection profile **required** under subrule (2) of this rule, the system shall determine the average *Giardia lamblia* inactivation for each calendar month by dividing the sum of all *Giardia lamblia* inactivations for that month by the number of values calculated for that month.

(ii) Step 2: The ~~system~~ **supply** shall determine the lowest monthly average value out of the 12 values. This value becomes the disinfection benchmark.

(d) **Until the effective date of R 325.10720d, i**~~I~~f the ~~system~~ **supply** uses chloramines, ozone or chlorine dioxide for primary disinfection, then it shall calculate the disinfection benchmark from the data collected for viruses to develop the disinfection profile under subrule (2) of this rule in addition to the *Giardia lamblia* disinfection benchmark calculated under subdivision (c) of this subrule. This viral benchmark shall be calculated in the same manner used to calculate the *Giardia lamblia* disinfection benchmark in subdivision (c) of this subrule.

(e) Beginning the effective date of R 325.10720d, supplies shall use the following procedures to calculate a disinfection benchmark:

(1) For each year of profiling data collected and calculated under subrule (3)(a) to (c) of this rule, supplies shall determine the lowest mean monthly level of both Giardia lamblia and virus inactivation. Supplies shall determine the mean Giardia lamblia and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly Giardia lamblia and virus log inactivation by the number of values calculated for that month.

(2) The disinfection benchmark is the lowest monthly mean value, for supplies with one year of profiling data, or the mean of the lowest monthly mean values, for supplies with more than one year of profiling data, of Giardia lamblia and virus log inactivation in each year of profiling data.

R 325.10730 Radionuclides; monitoring requirements for beta particle and photon radioactivity; applicability.

Rule 730. (1) To determine compliance with the maximum contaminant levels in R 325.10603(2)(c) for beta particle and photon radioactivity, a community water supply**, also considered a "water supply" or "supply" in this rule,** designated by the department as either vulnerable or utilizing water contaminated by effluents from nuclear facilities, shall sample for beta particle and photon radioactivity. The department's designation shall be based on monitoring data, environmental surveillance data collected in the vicinity of nuclear facilities, or source water assessments.

(2) Beginning within 1 quarter after being notified of the department's designation and continuing until the department reviews and either reaffirms or removes the designation, a supply shall collect samples at each entry point to the distribution system, known as sampling point, under both of the following provisions:

(a) For a vulnerable supply, quarterly samples for beta emitters and annual samples for tritium and strontium 90.

(b) For a supply utilizing waters contaminated by effluents from nuclear facilities, quarterly samples for beta emitters and iodine 131 and annual samples for tritium and

strontium 90. A supply shall monitor and analyze the samples under all of the following provisions:

(i) Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of 3 monthly samples.

(ii) For iodine 131, a composite of 5 consecutive daily samples shall be analyzed once each quarter. As ordered by the department, more frequent monitoring shall be conducted when iodine 131 is identified in the finished water.

(iii) Annual monitoring for strontium 90 and tritium shall be conducted by means of the analysis of a composite of 4 consecutive quarterly samples or analysis of 4 quarterly samples.

(3) All of the following provisions apply for gross beta particle activity:

(a) A supply may analyze for naturally occurring potassium 40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. A supply may subtract the potassium 40 beta particle activity value from the total gross beta particle activity value to determine if the screening level in subdivision (b) of this subrule is exceeded. The potassium 40 beta particle activity shall be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(b) If the gross beta particle activity minus the naturally occurring potassium 40 beta particle activity at a sampling point has a running annual average, computed quarterly, less than or equal to a screening level of 50 pCi/L for a vulnerable supply or 15 pCi/L for a supply utilizing waters contaminated by effluents from nuclear facilities, then the department may reduce the frequency of monitoring at that sampling point to once every 3 years. During the reduced monitoring period, a supply shall collect ~~all~~ **the same type of** samples required in subrule (2)(a) of this rule for a vulnerable supply or subrule (2)(b) of this rule for a supply utilizing water contaminated by effluents from nuclear facilities.

(c) If the gross beta particle activity minus the naturally occurring potassium 40 beta particle activity exceeds the **appropriate** screening level in subdivision (b) of this subrule, then an analysis of the sample shall be performed to identify the major radioactive constituents present in the sample and the appropriate doses shall be calculated and summed to determine compliance with R 325.10603(2)(c)(i), using the formula in R 325.10603(2)(c)(ii). Doses shall also be calculated and combined for measured levels of tritium and strontium to determine compliance.

(4) For a supply in the vicinity of a nuclear facility, the community water supply may utilize environmental surveillance data collected by the nuclear facility instead of monitoring at the supply's entry point or points, where the department determines that the data is applicable to a particular water supply. If there is a release from a nuclear facility, then a supply which uses surveillance data shall begin monitoring at the community water supply's entry point or points under subrule (2)(a) or (b) of this rule.

(5) A community water supply designated by the department to monitor for beta particle and photon radioactivity shall not apply to the department for a waiver from the monitoring frequencies specified in subrule (2)(a) or (b) of this rule.

(6) A supply shall monitor monthly at the sampling point or points that exceed the maximum contaminant level in R 325.10603(2)(c) beginning the month after the exceedance occurs. The supply shall continue monthly monitoring until the supply has established, by the average of results from any 3 consecutive months, that the MCL is being met. A supply that establishes that the MCL is being met shall return to quarterly monitoring until it meets the requirements set forth in subrule (3)(b) of this rule.

R 325.10731 Sample analyses; approved laboratories and personnel.

Rule 731. For the purpose of determining compliance with the monitoring requirements prescribed by this part, samples shall be considered valid only if they have

been analyzed by a laboratory approved by the department, except that measurements for **alkalinity, bromide, calcium, daily chlorite samples at the entrance to the distribution system, conductivity, magnesium, orthophosphate, pH, residual disinfectant concentration, silica, specific ultraviolet absorbance, temperature, and** turbidity may be performed by personnel acceptable to the department.

R 325.10735 Vigilance of threats or hazards; notification to ~~division~~ **department**.

Rule 735. (1) A ~~supplier of water~~ **public water supply** shall maintain continued vigilance of activities posing threats or hazards of undue contamination to the source of water.

(2) In the event of a threat of contamination of a public water supply source, ~~a supplier of water~~ **the public water supply** shall immediately notify the ~~division~~ **department**.

R 325.10739 Groundwater supply rules; groundwater source microbial monitoring and analytical methods.

Rule 739. (1) All of the following provisions apply to triggered source water monitoring in a groundwater supply that is subject to R 325.10612.

(a) A groundwater supply shall conduct triggered source water monitoring if both of the following conditions exist:

(i) The groundwater supply does not provide not less than 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer for each groundwater source.

(ii) The groundwater supply is notified that a sample collected under R 325.10705 to R 325.10706 is total coliform positive and the sample is not invalidated under R 325.10707a.

(b) A groundwater supply shall collect, within 24 hours of notification of the total coliform positive sample, at least one groundwater source sample from each groundwater source in use at the time the total coliform positive sample was collected under R 325.10705 to R 325.10706, except as provided in paragraph (ii) of this subdivision. The sample shall be analyzed for the presence of E. coli, or if approved by the department, for the presence of enterococci or coliphage. All of the following apply to groundwater source sample requirements:

(i) The department may extend the 24 hour time limit on a case by case basis if the groundwater supply cannot collect the groundwater source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the department will specify how much time the groundwater supply has to collect the sample.

(ii) If approved by the department, groundwater supplies with more than 1 groundwater source may meet the requirements of this subdivision by sampling a representative groundwater source or sources. If directed by the department, groundwater supplies shall submit for department approval a triggered source water monitoring plan that identifies 1 or more groundwater sources that are representative of each monitoring site in the groundwater supply's sample siting plan under R 325.10705 to R 325.10706 and that the groundwater supply intends to use for representative sampling under this paragraph.

(iii) A groundwater supply serving 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of R 325.10707 and to satisfy the monitoring requirements of this subdivision for that groundwater. If the repeat sample collected from the groundwater source is E.

coli positive, the groundwater supply shall comply with subdivision (c) of this subrule.

(c) If the department does not require corrective action under R 325.10612a(1)(b) for a fecal indicator positive source water sample collected under subdivision (b) of this subrule that is not invalidated under R 325.10739(3), the groundwater supply shall collect 5 additional source water samples from the same source within 24 hours of being notified of the fecal indicator positive sample and have it analyzed for the presence of E. coli, or with department approval, for the presence of enterococci or coliphage.

(d) Both of the following provisions apply to consecutive supplies and wholesale supplies:

(i) In addition to the other requirements of this subrule, a consecutive groundwater supply that has a total coliform positive sample collected under R 325.10705 to R 325.10706 shall notify the wholesale supply or supplies within 24 hours of being notified of the total coliform positive sample.

(ii) In addition to the other requirements of this subrule, a wholesale groundwater supply shall comply with both of the following:

(A) A wholesale groundwater supply that receives notice from a consecutive supply it serves that a sample collected under R 325.10705 to R 325.10706 is total coliform positive shall, within 24 hours of being notified, collect a sample from its groundwater source or sources under subdivision (b) of this subrule and have it analyzed it for the presence of E. coli, or with department approval, for the presence of enterococci or coliphage.

(B) If the sample collected under subparagraph (A) of this paragraph is fecal indicator positive, the wholesale groundwater supply shall notify all consecutive supplies served by that groundwater source of the fecal indicator source water positive within 24 hours of being notified of the groundwater source sample monitoring result and shall meet the requirements of subdivision (c) of this subrule.

(e) Exceptions to the triggered source water monitoring requirements are either of the following. A groundwater supply is not required to comply with the source water monitoring requirements of subrule (1) of this rule if either of the following conditions exists:

(i) The department determines, and documents in writing, that the total coliform positive sample collected under R 325.10705 to R 325.10706 is caused by a distribution system deficiency.

(ii) The total coliform positive sample collected under R 325.10705 to R 325.10706 is collected at a location that meets department criteria for distribution system conditions that will cause total coliform positive samples.

(2) All of the following provisions apply to assessment source water monitoring. If directed by the department, groundwater supplies shall conduct assessment source water monitoring that meets department determined requirements for that monitoring. A groundwater supply conducting assessment source water monitoring may use a triggered source water sample collected under subrule (1)(b) of this rule to meet the requirements of this subrule. Department determined assessment source water monitoring requirements may include the following:

(a) Collection of a total of 12 groundwater source samples that represent each month the groundwater supply provides groundwater to the public.

(b) Collection of samples from each well unless the groundwater supply obtains written department approval to conduct monitoring at 1 or more wells within the

groundwater supply that are representative of multiple wells used by that groundwater supply and that draw water from the same hydrogeologic setting.

(c) Collection of a standard sample volume of not less than 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.

(d) Analysis of all groundwater source samples for the presence of E. coli, or if approved by the department, for the presence of enterococci, or coliphage.

(e) Collection of groundwater source samples at a location before any treatment of the groundwater source unless the department approves a sampling location after treatment.

(f) Collection of groundwater source samples at the well itself unless the groundwater supply's configuration does not allow for sampling at the well itself and the department approves an alternate sampling location that is representative of the water quality of that well.

(3) All of the following provisions apply to invalidation of a fecal indicator positive groundwater source sample.

(a) A groundwater supply may obtain department invalidation of a fecal indicator positive groundwater source sample collected under triggered source water monitoring of subrule (1) of this rule only under either of the following conditions:

(i) The groundwater supply provides the department with written notice from the laboratory that improper sample analysis occurred.

(ii) The department determines and documents in writing that there is substantial evidence that a fecal indicator positive groundwater source sample is not related to source water quality.

(b) If the department invalidates a fecal indicator positive groundwater source sample, the groundwater supply shall collect another source water sample under subrule (1) of this rule within 24 hours of being notified by the department of its invalidation decision and have it analyzed for the same fecal indicator. The department may extend the 24 hour time limit on a case by case basis if the groundwater supply cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the department will specify how much time the groundwater supply has to collect the sample.

(4) Both of the following provisions apply to sampling location:

(a) A groundwater source sample required under subrule (1) of this rule shall be collected at a location before treatment of the groundwater source unless the department approves a sampling location after treatment.

(b) If the groundwater supply's configuration does not allow for sampling at the well itself, the groundwater supply may collect a sample at a department approved location to meet the requirements of subrule (1) of this rule if the sample is representative of the water quality of that well.

(5) If directed by the department, a groundwater supply that places a new groundwater source into service after November 30, 2009, shall conduct assessment source water monitoring under subrule (2) of this rule. If directed by the department, the groundwater supply shall begin monitoring before the groundwater source is used to provide water to the public.

(6) A groundwater supply with a groundwater source sample collected under subrules (1) or (2) of this rule that is fecal indicator positive and that is not invalidated under subrule (3) of this rule, including consecutive supplies served by the groundwater source, shall conduct public notification under R 325.10402.

(7) Failure to meet the requirements of subrules (1) to (5) of this rule is a monitoring violation and requires the groundwater supply to provide public notification under R 325.10404.

R 325.10739a Groundwater supply rules; compliance monitoring.

Rule 739a. (1) This subrule applies to existing groundwater sources. A groundwater supply that is not required to meet the source water monitoring requirements of R 325.10612, R 325.10612a, R 325.10739, this rule, or R 325.10739b for 1 or more groundwater sources because it provides not less than 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer for 1 or more groundwater sources before December 1, 2009, shall notify the department in writing that it provides not less than 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer for the specified groundwater source and begin compliance monitoring under subrule (3) of this rule by December 1, 2009. Notification to the department shall include engineering, operational, or other information that the department requests to evaluate the submission. If the groundwater supply subsequently discontinues 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer for a groundwater source, the supply shall conduct groundwater source monitoring as required under R 325.10739.

(2) This subrule applies to new groundwater sources. A groundwater supply that places a groundwater source in service after November 30, 2009, that is not required to meet the source water monitoring requirements of R 325.10612, R 325.10612a, R 325.10739, this rule, or R 325.10739b because the groundwater supply provides not less than 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer for the groundwater source shall comply with all of the following:

(a) The groundwater supply shall notify the department in writing that it provides not less than 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer for the groundwater source. Notification to the department shall include engineering, operational, or other information that the department requests to evaluate the submission.

(b) The groundwater supply shall conduct compliance monitoring as required under subrule (3) of this rule within 30 days of placing the source in service.

(c) The groundwater supply shall conduct groundwater source monitoring under R 325.10739 if the groundwater supply subsequently discontinues 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer for the groundwater source.

(3) This subrule applies to monitoring requirements. A groundwater supply subject to the requirements of R 325.10612a or subdivisions (a) or (b) of this subrule shall monitor the effectiveness and reliability of treatment for that groundwater source before or at the first customer as follows:

(a) Both of the following apply to chemical disinfection:

(i) A groundwater supply that serves more than 3,300 people shall continuously monitor the residual disinfectant concentration at a location approved by the

department and shall record the lowest residual disinfectant concentration each day that water from the groundwater source is served to the public. The groundwater supply shall maintain the department determined residual disinfectant concentration every day the groundwater supply serves water from the groundwater source to the public. If there is a failure in the continuous monitoring equipment, the groundwater supply shall conduct grab sampling every 4 hours until the continuous monitoring equipment is returned to service. The groundwater supply shall resume continuous residual disinfectant monitoring within 14 days.

(ii) A groundwater supply that serves 3,300 or fewer people shall monitor the residual disinfectant concentration at a location approved by the department and record the residual disinfection concentration each day that water from the groundwater source is served to the public. The groundwater supply shall maintain the department determined residual disinfectant concentration every day the groundwater supply serves water from the groundwater source to the public. The groundwater supply shall take a daily grab sample during the hour of peak flow or at another time specified by the department. If any daily grab sample measurement falls below the department determined residual disinfectant concentration, the groundwater supply shall take follow up samples every 4 hours until the residual disinfectant concentration is restored to the department determined level. Alternatively, a groundwater supply that serves 3,300 or fewer people may monitor continuously and meet the requirements of paragraph (i) of this subdivision.

(b) A groundwater supply that uses membrane filtration to meet the requirements of R 325.10612, R 325.10612a and R 325.10739, this rule, and R 325.10739b shall monitor the membrane filtration process under all department specified monitoring requirements and shall operate the membrane filtration under all department specified compliance requirements. A groundwater supply that uses membrane filtration is in compliance with the requirement to achieve not less than 4 log removal of viruses when all of the following conditions are met:

(i) The membrane has an absolute molecular weight cut off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve not less than 4 log removal of viruses.

(ii) The membrane process is operated under department specified compliance requirements.

(iii) The integrity of the membrane is intact.

(c) A groundwater supply that uses a department approved alternative treatment to meet the requirements of R 325.10612, R 325.10612a and R 325.10739, this rule, and R 325.10739b by providing not less than 4 log treatment of viruses (using inactivation, removal, or a department approved combination of 4 log virus inactivation and removal) before or at the first customer shall comply with both of the following:

(i) Monitor the alternative treatment under all department specified monitoring requirements.

(ii) Operate the alternative treatment under all compliance requirements that the department determines to be necessary to achieve not less than 4 log treatment of viruses.

(4) A groundwater supply that discontinues 4 log treatment of viruses under R 325.10612a(3) is subject to the source water monitoring requirements of R 325.10739.

(5) Failure to meet the monitoring requirements of subrule (1) to (3) of this section is a monitoring violation and requires the groundwater supply to provide public notification under R 325.10404.

R 325.10739b Groundwater supply rules; reporting and recordkeeping.

Rule 739b. (1) In addition to the reporting requirements of R 325.10734, a groundwater supply subject to R 325.10612 shall provide all of the following information to the department:

(a) A groundwater supply conducting compliance monitoring under R 325.10739a shall notify the department any time the groundwater supply fails to meet a department specified requirement including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation under the criteria or requirements is not restored within 4 hours. The groundwater supply shall notify the department as soon as possible, but in no case later than the end of the next business day.

(b) After completing any corrective action under R 325.10612a(1), a groundwater supply shall notify the department within 30 days of completion of the corrective action.

(c) If a groundwater supply subject to the requirements of R 325.10739(1) does not conduct source water monitoring under R 325.10739(1)(e)(ii), the groundwater supply shall provide documentation to the department within 30 days of the total coliform positive sample that it met the department criteria.

(2) A groundwater supply subject to R 325.10612 shall maintain records under R 325.11509.